

SOAH DOCKET NO. 582-07-2673
TCEQ DOCKET NO. 2007-0204-WDW
APPLICATION OF TEXCOM GULF) STATE OFFICE OF
DISPOSAL, LLC, FOR TEXAS)
COMMISSION ON ENVIRONMENTAL)
QUALITY UNDERGROUND INJECTION)
CONTROL PERMIT NOS. WDW410,)
WDW411, WDW412 AND WDW413) ADMINISTRATIVE HEARINGS

SOAH DOCKET NO. 582-07-2674
TCEQ DOCKET NO. 2007-0362-IHW
APPLICATION OF TEXCOM GULF) STATE OFFICE OF
DISPOSAL, LLC, FOR TEXAS)
COMMISSION ON ENVIRONMENTAL)
QUALITY INDUSTRIAL SOLID)
WASTE PERMIT NO. 87758) ADMINISTRATIVE HEARINGS

HEARING ON THE MERITS
THURSDAY, JUNE 24, 2010

BE IT REMEMBERED THAT at 8:03 a.m., on
Thursday, the 24th day of June 2010, the above-entitled
matter came on for hearing at the State Office of
Administrative Hearings, William P. Clements, Jr.,
Building, 300 West 15th Street, Room 404, Austin, Texas,
before THOMAS H. WALSTON AND CATHERINE C. EGAN,
ADMINISTRATIVE LAW JUDGES, and the following proceedings
were reported by Lorrie A. Schnoor, Certified Shorthand
Reporter of:

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1810	<p>1 PROCEEDINGS</p> <p>2 THURSDAY, JUNE 24, 2010</p> <p>3 (8:03 a.m.)</p> <p>4 (Exhibit ED Nos. 19 through 24 marked)</p> <p>5 JUDGE WALSTON: Okay. We'll go on the</p> <p>6 record. This is a continuation of the hearing in SOAH</p> <p>7 Docket No.'s 582-07-2673 and 2674 concerning TexCom Gulf</p> <p>8 Disposal.</p> <p>9 I'm not aware of any preliminary matters.</p> <p>10 Do the parties have any preliminary matters?</p> <p>11 MS. MENDOZA: I just wanted to make sure</p> <p>12 that everyone knew that yesterday after the close of the</p> <p>13 hearing, Denbury made an offer of proof on the mineral</p> <p>14 interest issues under 27.051(a)(2), which we had not</p> <p>15 been allowed to put in testimony on. And I just wanted</p> <p>16 to confirm that --</p> <p>17 JUDGE WALSTON: Yes, ma'am.</p> <p>18 MS. MENDOZA: -- that was the ruling that</p> <p>19 we couldn't put in testimony on it, and we made our</p> <p>20 offer of proof.</p> <p>21 JUDGE WALSTON: Okay. Thank you.</p> <p>22 Anything else?</p> <p>23 (No response)</p> <p>24 JUDGE WALSTON: Okay. If not, we'll</p> <p>25 proceed. And --</p>	1812	<p>1 of the motion, and we can -- I recall it was --</p> <p>2 MS. MENDOZA: Yes.</p> <p>3 JUDGE WALSTON: -- failure to disclose</p> <p>4 something. I can't remember.</p> <p>5 MS. MENDOZA: Yes.</p> <p>6 JUDGE WALSTON: But that should be in the</p> <p>7 transcript as well. It will --</p> <p>8 MS. MENDOZA: Yes.</p> <p>9 JUDGE WALSTON: It'll be limited to that.</p> <p>10 MS. MENDOZA: Okay. Thank you.</p> <p>11 MR. RILEY: All right.</p> <p>12 JUDGE WALSTON: If nothing else, then the</p> <p>13 executive director can call its witness.</p> <p>14 MS. GOSS: Diane Goss for the Executive</p> <p>15 Director calls Kathryn Flegal.</p> <p>16 JUDGE WALSTON: Will you raise your right</p> <p>17 hand.</p> <p>18 (Witness sworn)</p> <p>19 JUDGE WALSTON: Okay. And state your full</p> <p>20 name for the record.</p> <p>21 WITNESS FLEGAL: Kathryn Flegal.</p> <p>22 JUDGE WALSTON: Okay. You can proceed.</p> <p>23</p> <p>24</p> <p>25</p>
1811	<p>1 MR. RILEY: I'm sorry, Judge. I meant to</p> <p>2 do this this morning, and then I didn't do it. There's</p> <p>3 still an outstanding issue about some testimony I</p> <p>4 believe Mr. Herber was going to provide to you. I do</p> <p>5 have the testimony, but I haven't had a chance to go</p> <p>6 through it and explain what I'm asking you to strike.</p> <p>7 You may recall that.</p> <p>8 JUDGE WALSTON: Right.</p> <p>9 MR. RILEY: I'll try to do that at the</p> <p>10 break this morning, if there's time. Otherwise, is it</p> <p>11 okay if I submit it after?</p> <p>12 JUDGE WALSTON: That's what I was</p> <p>13 thinking, even if it's submitted in writing. And, of</p> <p>14 course, everybody would be allowed to file a written</p> <p>15 response.</p> <p>16 MS. MENDOZA: And, Your Honor, the only</p> <p>17 thing I wanted to be clear upon, as I understand the</p> <p>18 objection, it's because of the failure to produce a --</p> <p>19 sort of like the metadata, showing when certain pieces</p> <p>20 of the program were opened and turned off and opened and</p> <p>21 turned off. And I just want to be clear that we need to</p> <p>22 be clear which portions of Mr. Herber's testimony that,</p> <p>23 you know -- that he relied upon that work to the extent</p> <p>24 that he did. So -- but I would --</p> <p>25 JUDGE WALSTON: I assume that will be part</p>	1813	<p>1 PRESENTATION ON BEHALF OF</p> <p>2 THE EXECUTIVE DIRECTOR</p> <p>3 KATHRYN FLEGAL,</p> <p>4 having been first duly sworn, testified as follows:</p> <p>5 DIRECT EXAMINATION</p> <p>6 BY MS. GOSS:</p> <p>7 Q Would you please locate there on the table in</p> <p>8 front of you the Executive Director's supplemental</p> <p>9 prefiled testimony and exhibits binder?</p> <p>10 A Yes.</p> <p>11 Q Would you please take a moment to look through</p> <p>12 those exhibits and determine whether or not they are the</p> <p>13 ones that were submitted with your prefiled testimony</p> <p>14 and that you identify in your prefiled testimony?</p> <p>15 A (Witness complying.) Yes.</p> <p>16 Q Would you please direct your attention to ED</p> <p>17 Exhibit 19?</p> <p>18 A Yes.</p> <p>19 Q Is this your direct testimony prefiled in this</p> <p>20 remand hearing?</p> <p>21 A Yes.</p> <p>22 Q Are there any changes that you would like to</p> <p>23 make to this testimony prior to it being offered as an</p> <p>24 exhibit?</p> <p>25 A No.</p>

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1814	<p>1 Q Are Exhibits ED-20 through ED-24 the same</p> <p>2 exhibits that you reference in your prefiled testimony?</p> <p>3 A Yes.</p> <p>4 MS. GOSS: The Executive Director offers</p> <p>5 ED Exhibits 19 through 24.</p> <p>6 JUDGE WALSTON: Exhibits ED-19 through 24</p> <p>7 are admitted.</p> <p>8 (Exhibit ED Nos. 19 through 24 admitted)</p> <p>9 MS. GOSS: Pass the witness.</p> <p>10 JUDGE WALSTON: Okay. And being</p> <p>11 consistent with our order of cross-examination and</p> <p>12 allowing parties, at least, to have a potential for</p> <p>13 friendly cross to go first, we'll have TexCom go first.</p> <p>14 MR. RILEY: Thank you, Judge.</p> <p>15 CROSS-EXAMINATION</p> <p>16 BY MR. RILEY:</p> <p>17 Q Ms. Flegal, I just have a few questions.</p> <p>18 First of all, good morning.</p> <p>19 A Good morning.</p> <p>20 Q Ms. Flegal, I noticed in your prefiled</p> <p>21 testimony that you applied a model, as we've been</p> <p>22 calling it, called PRESS. Is that correct?</p> <p>23 A Yes.</p> <p>24 Q And sometime -- somewhere along the line in</p> <p>25 this case, we started -- we developed a terminology or a</p>	1816	<p>1 marked -- distances marked the various rings, for lack</p> <p>2 of a better term, or radii? You see that?</p> <p>3 A Yes.</p> <p>4 Q Okay. Your calculated cone of influence, based</p> <p>5 on your modeling as described in your prefiled</p> <p>6 testimony, is 2.7 miles -- I'm sorry -- 2.8 miles. Is</p> <p>7 that correct?</p> <p>8 A Yes.</p> <p>9 Q So that -- your calculated distance for the</p> <p>10 cone of influence would be within -- just outside the</p> <p>11 2.5-mile radius but within the 2.94-mile radius depicted</p> <p>12 on that map that's in Exhibit 94. Is that right?</p> <p>13 A Yes.</p> <p>14 Q Were you here, Ms. Flegal, when Mr. Grant</p> <p>15 testified about -- or testified to the effect that he</p> <p>16 did not have concerns regarding artificial penetrations</p> <p>17 within the 2.94-mile distance?</p> <p>18 A Yes.</p> <p>19 Q Do you share that opinion?</p> <p>20 A I do.</p> <p>21 MR. RILEY: Thank you. I pass the</p> <p>22 witness.</p> <p>23 JUDGE WALSTON: Okay. Lone Star?</p> <p>24 MR. HILL: Thank you, Your Honor.</p> <p>25 MR. RILEY: Before we go on, Judge, these</p>
1815	<p>1 nomenclature calling modeling -- or a model PRESS2.</p> <p>2 A Yeah.</p> <p>3 Q Is that right?</p> <p>4 A Yes.</p> <p>5 Q What -- you don't refer to PRESS2 in your</p> <p>6 prefiled testimony. You refer to PRESS. And you -- is</p> <p>7 there a difference between the model you used and the</p> <p>8 model we called previously PRESS2?</p> <p>9 A No.</p> <p>10 Q Okay. I need to just get an exhibit number so</p> <p>11 I can -- I want to put one of the TexCom exhibits before</p> <p>12 you. It's supplemental well record information, if</p> <p>13 you -- perhaps you remember what exhibit it was.</p> <p>14 MR. LEE: Oh, Exhibit 94.</p> <p>15 MR. RILEY: Exhibit 94.</p> <p>16 MR. LEE: It's a big binder.</p> <p>17 Q (BY MR. RILEY) It should be a big binder up</p> <p>18 there. Do you have it in front of you, Ms. Flegal?</p> <p>19 A Yes.</p> <p>20 Q Thank you.</p> <p>21 In Exhibit 94, as you can see, there's</p> <p>22 some concentric rings on a map that's contained in that</p> <p>23 exhibit. Do you see that?</p> <p>24 A Yes.</p> <p>25 Q Okay. And you see the various distance</p>	1817	<p>1 are self authenticating. I wasn't going to ask the</p> <p>2 witness about them, but they are relevant, perhaps. So</p> <p>3 rather than come around again and cause additional</p> <p>4 cross-examination, I have two exhibits that are</p> <p>5 certified records that I'd like to introduce at this</p> <p>6 time.</p> <p>7 JUDGE WALSTON: Okay. Why don't you show</p> <p>8 them to the parties --</p> <p>9 MR. RILEY: Sure.</p> <p>10 JUDGE WALSTON: -- and the witness. Or</p> <p>11 you don't need the witness? You say they're --</p> <p>12 MR. RILEY: I don't. I think they're</p> <p>13 certified. Yeah, they're certified records of the TCEQ.</p> <p>14 Be off the record for a second. I wanted</p> <p>15 to ask the reporter a question.</p> <p>16 (Discussion off the record)</p> <p>17 (Exhibits TexCom Nos. 111 and 112 marked)</p> <p>18 MR. RILEY: For the record, Judges, we've</p> <p>19 identified two certified records of the TCEQ. The first</p> <p>20 one being a March 8th, 1993, letter from the Texas</p> <p>21 Railroad Commission; and we've identified that as TexCom</p> <p>22 111. As it is a certified agency record, we offer it</p> <p>23 into this record.</p> <p>24 And the same is true of TexCom 112. It's</p> <p>25 a certified copy of a TCEQ record. It's a letter from</p>

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<p style="text-align: right;">1818</p> <p>1 the Railroad Commission of Texas dated August 22nd, 2 2001, and we also offer TexCom Exhibit 112. 3 JUDGE WALSTON: Okay. Are there any 4 objections to -- these 111 and 112? -- TexCom 5 Exhibits 111 and 112? 6 MS. MENDOZA: Your Honor, I'm going to 7 object at least to, I think, 112, which is the Huntsman 8 Petrochemical. I don't see the relevance of this. We 9 haven't had any -- this is about a completely different 10 permit. It's in a completely different area. We 11 haven't had any testimony in any way that this is 12 somehow relevant to TexCom's application. And this is 13 just -- we're putting something in the record, and we 14 have absolutely no -- it's just not relevant. This 15 doesn't have anything to do with the application that's 16 before us today. 17 MR. RILEY: I believe -- 18 MR. FORSBERG: Your Honors? 19 JUDGE WALSTON: Wait. Wait. See if there 20 are any other objections. 21 MR. FORSBERG: Your Honor, Individual 22 Protestants would object. In particular, both of these 23 documents contain statements with regards to oil and gas 24 reservoirs and whether or not they'll be endangered. It 25 seems like if you allow this into the record, we're</p>	<p style="text-align: right;">1820</p> <p>1 portion, which I do not think is necessary -- strike the 2 portion related to ownership of mineral interests, 3 that's certainly fine with me. But the issues of no 4 harm also relate to findings of the Railroad Commission 5 in wells that are a short distance from the wells in 6 question, and they bear directly on the question of 7 geology. 8 Moreover, they are simply agency records. 9 They are certified and part of the application that 10 resulted in the issuance of WDW383 and 384, and 11 certainly the Commissioners could take notice of their 12 own agency records, if necessary. 13 JUDGE WALSTON: Okay. 14 MS. MENDOZA: Your Honor? 15 JUDGE WALSTON: Go ahead. 16 MS. MENDOZA: Well, I just wanted to point 17 out that the 383 and the 384, if you will remember, was 18 a discussion about capacity for disposal and other 19 disposal options. It was not a discussion of this. 20 And Mr. Riley did say, of course, that 21 these do talk about no harm. It's talking about injury 22 or endangerment of known oil and gas reservoir. And it 23 appears he is actually offering these to prove up that 24 matter, which is what he just argued, and -- 25 MR. RILEY: That's not correct.</p>
<p style="text-align: right;">1819</p> <p>1 opening up a door on oil and gas reservoirs, which I 2 thought was not supposed to be part of this matter. 3 MS. MENDOZA: And, Your Honor, I'm going 4 to join in Mr. Forsberg's objection with the same 5 information. I mean, this is them putting in 6 information about damaged oil mineral interests beyond 7 their particular application, and I have been precluded 8 from butting on any evidence about that. 9 JUDGE WALSTON: Okay. Any other 10 objections? 11 (No response) 12 JUDGE WALSTON: All right. Your response, 13 Mr. Riley? 14 MR. RILEY: Yes, sir. 15 As you know, we introduced permit numbers 16 WDW383 -- excuse me -- and 384, and those are permits 17 that were issued to Huntsman Petrochemical Corporation 18 that also used some of the terminology that's been in 19 dispute in this matter as to designation of the lower 20 and middle Cockfield Formation in the area of the TexCom 21 well. 22 As we know from other testimony, the 23 Huntsman facility's just down the road from TexCom. 24 These letters reflect the Railroad Commission's opinion 25 on geology of the area. If we want to strike the</p>	<p style="text-align: right;">1821</p> <p>1 MS. MENDOZA: -- that is the direct 2 evidence that I have been prohibited -- that Denbury has 3 been prohibited from putting in this matter. And to now 4 take this into the record and allow them to use this to 5 bolster their no-harm argument is completely -- it 6 completely prejudices Denbury because we've not been 7 allowed to do anything on this. 8 And in addition, I would note that he is 9 saying that this offers the Railroad Commission's 10 opinion on geology. You know, I -- 11 MR. RILEY: It does. 12 MS. MENDOZA: Yeah, it does, and that's 13 extremely prejudicial to bring in new opinions at this 14 point in the case. 15 MR. FORSBERG: If I could, Your Honor. It 16 also -- it's Railroad Commission opinions on different 17 intervals that aren't even the same interval that TexCom 18 is proposing to inject. 19 JUDGE EGAN: I just have a -- just to 20 refresh my memory because -- 21 JUDGE WALSTON: Sure. 22 JUDGE EGAN: -- it's early morning, and 23 we've been going at this I think eight days now. 24 Both of the Huntsman's wells were 25 permitted for Class II injection. No?</p>

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1822	<p>1 MR. RILEY: Class I.</p> <p>2 JUDGE EGAN: Class I. Class I injection</p> <p>3 wells by TCEQ. Is that correct?</p> <p>4 MR. RILEY: That's correct.</p> <p>5 JUDGE EGAN: And TCEQ has a requirement,</p> <p>6 if I recall correctly, that the Railroad -- that there</p> <p>7 be some verification from the Railroad Commission</p> <p>8 that -- the oil and gas -- I'm not sure these documents</p> <p>9 are...</p> <p>10 MR. RILEY: These are those documents.</p> <p>11 These would support the applications that resulted in</p> <p>12 the issuance of WDW -- well, I'm sorry -- these --</p> <p>13 TexCom Exhibit 112 supports that application.</p> <p>14 JUDGE WALSTON: Hang on just a minute.</p> <p>15 (Discussion off the record)</p> <p>16 MR. WALKER: Your Honor, I'm sorry. Based</p> <p>17 on the argument that I've just heard, if I could make</p> <p>18 just one comment?</p> <p>19 JUDGE WALSTON: Sure.</p> <p>20 MR. WALKER: I think that the offer of</p> <p>21 this information clearly carries some implications that</p> <p>22 the Applicant wishes to establish, and I would ask that</p> <p>23 if these documents are offered, that there be no</p> <p>24 limitation on what those implications are across the</p> <p>25 board.</p>	1824	<p>1 JUDGE WALSTON: Sure. All right. But</p> <p>2 just so the record is clear, the objections to</p> <p>3 TexCom 111 and 112 are sustained.</p> <p>4 MR. RILEY: Well, let me ask about 111,</p> <p>5 Judge, if you mind just one more second.</p> <p>6 This relates to the Crossroads</p> <p>7 application, which is the same well. And I think it's</p> <p>8 actually in the record, at least the permit is in the</p> <p>9 record, so 111 and 112 are a bit different.</p> <p>10 JUDGE WALSTON: I understand. But I think</p> <p>11 it would be cumulative. As I recall from the first</p> <p>12 hearing, there was no dispute that the Railroad</p> <p>13 Commission had issued a letter. So --</p> <p>14 MR. RILEY: That's fine.</p> <p>15 JUDGE WALSTON: -- at the risk of opening</p> <p>16 the door now to evidence on oil and gas reserves which</p> <p>17 we've consistently excluded, we'll still sustain the</p> <p>18 objections to 111 and 112.</p> <p>19 MR. RILEY: Okay.</p> <p>20 JUDGE WALSTON: And they are not admitted.</p> <p>21 MR. RILEY: And may I ask, while we're</p> <p>22 just chatting about this, that they be held by the --</p> <p>23 just the records themselves be held by the court</p> <p>24 reporter as an offer of proof so we don't have to go</p> <p>25 through an elaborate deal later on.</p>
1823	<p>1 The operation of these wells -- we've</p> <p>2 talked about whether these two wells by Huntsman are, in</p> <p>3 fact, permitted, available to inject waste. And I think</p> <p>4 that implication -- if subsequent argument is made on</p> <p>5 that issue, then I think if this evidence is offered,</p> <p>6 then there should be no limitation on what that argument</p> <p>7 is, the availability of those wells to inject waste</p> <p>8 today.</p> <p>9 MR. RILEY: Certainly, I don't have an</p> <p>10 objection. I agree with Mr. Walker. If I put these</p> <p>11 into evidence, then any argument that's available to</p> <p>12 parties could be made from these documents. We may have</p> <p>13 a dispute as to whether those wells actually exist, but</p> <p>14 in terms of the permitting of those wells, that's</p> <p>15 certainly not in dispute.</p> <p>16 JUDGE WALSTON: Well, Judge Egan and I</p> <p>17 have conferred, and we've consistently excluded evidence</p> <p>18 concerning endangerment of the oil and gas reserves. So</p> <p>19 we're going to sustain the objections to 111 and 112.</p> <p>20 Obviously, if you're concerned about their offer of</p> <p>21 proof, you can make an offer of proof on these.</p> <p>22 MR. RILEY: I don't have to, Judge. These</p> <p>23 are actually agency records that the Commission can</p> <p>24 refer to, if they'd like to. They have these available</p> <p>25 at the Commission level.</p>	1825	<p>1 JUDGE WALSTON: That's fine.</p> <p>2 MR. RILEY: Thank you.</p> <p>3 JUDGE WALSTON: Lone Star?</p> <p>4 MR. HILL: Thank you, Your Honors.</p> <p>5 CROSS-EXAMINATION</p> <p>6 BY MR. HILL:</p> <p>7 Q Good morning, Ms. Flegal.</p> <p>8 A Good morning.</p> <p>9 Q How are you?</p> <p>10 A Fine. And you?</p> <p>11 Q Doing well, thanks.</p> <p>12 You've been here through the entirety of</p> <p>13 the hearing, have you?</p> <p>14 A Yes, mostly.</p> <p>15 Q My sympathies.</p> <p>16 (Laughter)</p> <p>17 Q (BY MR. HILL) In all seriousness, Ms. Flegal,</p> <p>18 you had testified in the -- what I'll call the original</p> <p>19 hearing in this case, did you not?</p> <p>20 A Yes.</p> <p>21 Q Okay. And in that case, you testified as</p> <p>22 Kathryn Hoffman. Is that right?</p> <p>23 A Yes.</p> <p>24 Q Okay. So you've since been married?</p> <p>25 A Yes.</p>

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1826	<p>1 Q For the record, congratulations again.</p> <p>2 A Thank you.</p> <p>3 Q Just -- I just wanted to make sure the record</p> <p>4 was clear that you're one in the same.</p> <p>5 Were you here yesterday for the testimony</p> <p>6 of Mr. Lakin?</p> <p>7 A Yes.</p> <p>8 Q Okay. Were you able to hear his opinions about</p> <p>9 the faults that exist and don't exist in the area of the</p> <p>10 TexCom well, based on his review of the Denbury 3D</p> <p>11 seismic information?</p> <p>12 A Let me -- I'm confused between the last two</p> <p>13 witnesses and their names. Was the last witness to</p> <p>14 testify Mr. Lakin?</p> <p>15 MR. RILEY: That's my recollection, yes.</p> <p>16 Q (BY MR. HILL) I believe that's right, yes.</p> <p>17 MR. RILEY: He was wearing a dark-colored</p> <p>18 shirt, gray hair.</p> <p>19 JUDGE WALSTON: Mr. Lakin was the fellow</p> <p>20 from Oklahoma, if that helps you.</p> <p>21 WITNESS FLEGAL: Thank you.</p> <p>22 A Could you please repeat the question?</p> <p>23 Q Sure.</p> <p>24 A I'm sorry.</p> <p>25 Q Sure, sure.</p>	1828	<p>1 And specifically, when I'm referring to a pressure</p> <p>2 barrier, I'm referring to a barrier to pressures that</p> <p>3 would be created by TexCom's proposed injection</p> <p>4 operation.</p> <p>5 A I don't know.</p> <p>6 Q Okay. You have no opinion?</p> <p>7 A No.</p> <p>8 Q Has anyone on your staff that has been charged</p> <p>9 with reviewing the TexCom Class I UIC applications</p> <p>10 expressed an opinion to you about whether there exists a</p> <p>11 pressure barrier to the north of WDW410, in the lower</p> <p>12 Cockfield Formation, within the 2.5-mile area of review?</p> <p>13 MR. RILEY: Objection.</p> <p>14 JUDGE WALSTON: What's the objection?</p> <p>15 MR. RILEY: Sounds like would be hearsay</p> <p>16 to me, unless somehow that opinion's been relied upon by</p> <p>17 this witness as an expert. But she asked if anyone's</p> <p>18 told you an opinion.</p> <p>19 MR. HILL: And --</p> <p>20 MR. RILEY: I guess the question -- the</p> <p>21 answer --</p> <p>22 MR. HILL: -- the witness is held out as</p> <p>23 an expert, and experts are allowed to testify about</p> <p>24 hearsay.</p> <p>25 MR. RILEY: If she's relied on it.</p>
1827	<p>1 You were here for -- do you recall now who</p> <p>2 I'm speaking of when I speak of Mr. Lakin?</p> <p>3 A Yes, and I was here. I was not entirely</p> <p>4 focused on his testimony.</p> <p>5 Q I appreciate your candor.</p> <p>6 Were you -- did you understand or were you</p> <p>7 able to hear him express his opinions about faults, in</p> <p>8 his opinion, that do exist and don't exist within the</p> <p>9 Cockfield Formation within the area of the proposed</p> <p>10 TexCom well WDW410?</p> <p>11 A Yes.</p> <p>12 Q Okay. Did you hear his testimony about his</p> <p>13 opinion that he perceived no faulting within the lower</p> <p>14 Cockfield Formation to the north of WDW410?</p> <p>15 A I don't specifically recall that.</p> <p>16 Q Okay. Let me ask you: Do you have an opinion</p> <p>17 about whether or not there exists a fault within the</p> <p>18 lower Cockfield Formation to the north of WDW410 within,</p> <p>19 let's say, the 2.5-mile area of review?</p> <p>20 A No.</p> <p>21 Q You don't have an opinion?</p> <p>22 A I don't.</p> <p>23 Q Okay. Do you believe there are any conditions</p> <p>24 that exist within the lower Cockfield Formation to the</p> <p>25 north of WDW410 that would act as a pressure barrier?</p>	1829	<p>1 JUDGE WALSTON: Okay. At this point, I</p> <p>2 think he's just asked if anyone's expressed an opinion</p> <p>3 and not what the opinion is.</p> <p>4 MR. HILL: That is my question.</p> <p>5 JUDGE WALSTON: Okay. So I'll overrule</p> <p>6 the objection.</p> <p>7 A Could you please repeat the question?</p> <p>8 Q (BY MR. HILL) Certainly.</p> <p>9 Has anyone on your staff that has been</p> <p>10 responsible for reviewing the TexCom Class I UIC</p> <p>11 applications expressed an opinion to you about whether</p> <p>12 there exists a pressure barrier to the north of WDW410</p> <p>13 within the lower Cockfield and within the 2.5-mile area</p> <p>14 of review?</p> <p>15 A No, not that I can recall.</p> <p>16 Q Okay. Is it your opinion, Ms. Flegal, that</p> <p>17 there exists between what TexCom has defined as the</p> <p>18 lower Cockfield Formation and what TexCom has defined as</p> <p>19 the middle Cockfield Formation a shale separation?</p> <p>20 A Could you please be more specific about the</p> <p>21 shale separation you're talking about?</p> <p>22 Q I'll give it a shot, and we'll take this in</p> <p>23 pieces.</p> <p>24 TexCom has defined its proposed injection</p> <p>25 interval as the lower Cockfield Formation at WDW410.</p>

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<p style="text-align: right;">1830</p> <p>1 Would you agree with that?</p> <p>2 A Yes.</p> <p>3 Q Okay. And you have an understanding of what</p> <p>4 TexCom means when it refers to the lower Cockfield</p> <p>5 Formation at that well. Is that correct?</p> <p>6 A Yes.</p> <p>7 Q Okay. TexCom has also described a component of</p> <p>8 the Cockfield Formation there at WDW -- WDW410 as the</p> <p>9 middle Cockfield Formation. Are you aware of that</p> <p>10 description?</p> <p>11 A Yes.</p> <p>12 Q Okay. Between what TexCom has defined as the</p> <p>13 middle Cockfield Formation and what TexCom has defined</p> <p>14 as the lower Cockfield Formation, TexCom has suggested</p> <p>15 or maintains, rather, that there is a separating layer</p> <p>16 of shale between those two components of the Cockfield</p> <p>17 Formation. Do you understand that component of their</p> <p>18 application?</p> <p>19 A I am familiar with that component.</p> <p>20 Q Okay. And that separating layer of shale is</p> <p>21 specifically the focus of my question here.</p> <p>22 Do you agree that there is a shale</p> <p>23 sequence that separates those two components of the</p> <p>24 Cockfield Formation as TexCom has defined them in its</p> <p>25 application?</p>	<p style="text-align: right;">1832</p> <p>1 communication?</p> <p>2 A I don't -- could you please rephrase that</p> <p>3 question?</p> <p>4 Q I'll give it a shot.</p> <p>5 You ran a PRESS2 model on the remand</p> <p>6 modeling. Is that correct?</p> <p>7 A I did.</p> <p>8 Q Okay. And as part of that modeling exercise,</p> <p>9 for lack of a better term, you had to tell the model how</p> <p>10 to consider pressuring within the injection interval,</p> <p>11 did you not?</p> <p>12 Let me rephrase that. That was a poor</p> <p>13 question.</p> <p>14 As part of that modeling exercise, you had</p> <p>15 to input assumptions about the thickness of the</p> <p>16 formation that would be subject to the pressuring, did</p> <p>17 you not?</p> <p>18 A Yes.</p> <p>19 Q Okay. And what thickness value, if you can</p> <p>20 recall, did you input in your PRESS2 model as part of</p> <p>21 this remand exercise?</p> <p>22 A Well -- oh. Zone thickness of 145 feet.</p> <p>23 Q Okay. And to support the assumption of a zone</p> <p>24 thickness of 145 feet, did you not also have to assume</p> <p>25 that the lower Cockfield and the middle Cockfield would</p>
<p style="text-align: right;">1831</p> <p>1 A That is more of a geologic interpretation that</p> <p>2 I specifically haven't made.</p> <p>3 Q Okay. Just so we're clear for the record,</p> <p>4 would you mind explaining your role in reviewing and</p> <p>5 overseeing the application process of the TexCom UIC</p> <p>6 Class I applications?</p> <p>7 A I was the project manager, and I reviewed all</p> <p>8 parts of the application except I was not responsible</p> <p>9 for reviewing Section -- I believe it's 5 that deals</p> <p>10 with the geology, regional and local geology, and also</p> <p>11 some parts of Section 7 which deals with reservoir</p> <p>12 characteristics.</p> <p>13 Q You did conduct modeling to assess potential</p> <p>14 pressuring of the various geologic formations at issue</p> <p>15 in this application, did you not?</p> <p>16 A Yes.</p> <p>17 Q Okay. And as part of that modeling exercise,</p> <p>18 you were required to place into the model various</p> <p>19 assumptions about geologic characterizations of the</p> <p>20 formations that are at issue in this application, were</p> <p>21 you not?</p> <p>22 A Yes.</p> <p>23 Q Okay. And as part of your modeling, for</p> <p>24 purposes of this remand, did you consider that the lower</p> <p>25 Cockfield and the middle Cockfield would not be in</p>	<p style="text-align: right;">1833</p> <p>1 not be in communication?</p> <p>2 A That could be implied by the -- specifying</p> <p>3 145 feet.</p> <p>4 Q Okay. Do you believe the lower Cockfield and</p> <p>5 the middle Cockfield to be in communication in the area</p> <p>6 of WDW410?</p> <p>7 And let me see if I can make that question</p> <p>8 even more specific.</p> <p>9 Regardless of what we consider to be the</p> <p>10 assumptions of 4400-foot fault, or the fault 4400 feet</p> <p>11 to the south of the well, other than that as a potential</p> <p>12 vehicle for communication, do you believe there are</p> <p>13 other means of communication between the middle and the</p> <p>14 lower Cockfield in the area relevant to WDW410?</p> <p>15 A I haven't made that determination.</p> <p>16 Q Okay. If I could direct your attention,</p> <p>17 Ms. Flegal, to TexCom Exhibit 106. Should be there</p> <p>18 available to you. And I'll give you a hint. It is the</p> <p>19 Huntsman Petrochemical Corporation injection permits</p> <p>20 that we were discussing earlier. Do you have those</p> <p>21 available to you?</p> <p>22 A Yes.</p> <p>23 Q Okay. At the top right-hand corner of the</p> <p>24 permit there, there's a reference to a permit number.</p> <p>25 Could you tell me what number that says?</p>

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1834	<p>1 A Permit No. WDW383.</p> <p>2 Q Okay. This is an active Class I injection well</p> <p>3 permit, is it not, Ms. Hoffman?</p> <p>4 A Just by looking at this, I can't be positive</p> <p>5 about that.</p> <p>6 Q Do you have any reason to believe that this</p> <p>7 permit has become invalidated or otherwise withdrawn</p> <p>8 from -- by the Commission?</p> <p>9 A I don't know.</p> <p>10 Q Okay. Is there anything on here, as best you</p> <p>11 can tell, that indicates to you that this is an invalid</p> <p>12 permit?</p> <p>13 A No.</p> <p>14 Q Okay. So if we're -- if our body of knowledge</p> <p>15 about WDW385, and to be completely inclusive, also</p> <p>16 attached is WDW384, if our universe of understanding of</p> <p>17 these two permits is what is reflected in the terms</p> <p>18 here, then we -- it's a safe assumption that these are</p> <p>19 both active permits. Wouldn't you agree?</p> <p>20 A Just from what I'm looking at here, I can't</p> <p>21 determine that for sure.</p> <p>22 Q Okay. What would we look for to know whether a</p> <p>23 Class I UIC permit has been invalidated, withdrawn,</p> <p>24 otherwise legally unenforceable?</p> <p>25 A That would be in our agency records.</p>	1836	<p>1 more, as I said, but I don't think anybody wants that in</p> <p>2 the record.</p> <p>3 JUDGE WALSTON: So you can go ahead,</p> <p>4 Mr. Hill.</p> <p>5 MR. HILL: Okay.</p> <p>6 Q (BY MR. HILL) Ms. Flegal, why don't we just</p> <p>7 assume, for the purposes of these questions that I have</p> <p>8 for you, that these are both legally enforceable permits</p> <p>9 today. Can you make that assumption with me?</p> <p>10 A Yes.</p> <p>11 Q Okay. If you turn to Page 2 of WDW383, in the</p> <p>12 last sentence of Paragraph 4, there is a reference to</p> <p>13 the lower Cockfield Formation. Do you see that?</p> <p>14 A Yes.</p> <p>15 Q Do you have any reason to believe that this is</p> <p>16 a different lower Cockfield Formation than the lower</p> <p>17 Cockfield Formation that is identified by TexCom in its</p> <p>18 Class I UIC applications?</p> <p>19 A I really can't make that determination by</p> <p>20 looking at this.</p> <p>21 Q Do you know of a -- let me take a step back.</p> <p>22 Are you familiar with where Huntsman</p> <p>23 Petrochemical Corporation is located there in Conroe?</p> <p>24 A I'm not familiar.</p> <p>25 Q Okay. So if I were to suggest to you that</p>
1835	<p>1 Q Okay. And so assuming that we have been given</p> <p>2 a complete agency record here with respect to the legal</p> <p>3 viability of these two permits, is there anything</p> <p>4 associated or attached to these records here that</p> <p>5 indicate that these permits are legally unenforceable?</p> <p>6 MR. RILEY: Objection. I'm happy to help</p> <p>7 complete the record a little further, but I think there</p> <p>8 will be problems with that. But the -- this is not the</p> <p>9 entire file.</p> <p>10 This is the permit itself. It doesn't</p> <p>11 include the application or any subsequent documents.</p> <p>12 This is just the permit that was issued in 2002, I</p> <p>13 believe. So I don't want anyone to be under the</p> <p>14 misimpression that we copied the entire file as it</p> <p>15 relates to these.</p> <p>16 MR. HILL: And that certainly wasn't my</p> <p>17 insinuation. I'm just trying to get an understanding of</p> <p>18 whether or not we're to assume that these permits exist</p> <p>19 legally today or whether they don't.</p> <p>20 JUDGE WALSTON: I don't think there was an</p> <p>21 objection, just a clarification.</p> <p>22 MR. RILEY: Yes, that's all I want -- I</p> <p>23 just didn't -- you know, there's a big file. And we</p> <p>24 picked the permits themselves, not the application and</p> <p>25 other supporting documentation. We do have a little bit</p>	1837	<p>1 Huntsman Petrochemical Corporation is within two miles</p> <p>2 of WDW410, you wouldn't have any reason to dispute that,</p> <p>3 would you?</p> <p>4 A I have no -- no.</p> <p>5 Q Okay. And so if we can just add to our</p> <p>6 assumptions here that the Huntsman Petrochemical</p> <p>7 Corporation -- or rather, the specific location that's</p> <p>8 identified in WDW4 -- 383 here for an injection well is</p> <p>9 within two miles of the TexCom proposed WDW410 well, do</p> <p>10 you have any reason to believe that there is a different</p> <p>11 lower Cockfield Formation within two miles of WDW410</p> <p>12 than what TexCom has described in its Class I UIC</p> <p>13 applications?</p> <p>14 A I have no reason to believe one way or the</p> <p>15 other looking at this.</p> <p>16 Q Okay. Based on your understanding of the</p> <p>17 TexCom application, do you understand that they proposed</p> <p>18 to inject into a injection interval that persists</p> <p>19 throughout at least the 2.5-mile area of review?</p> <p>20 A Yes.</p> <p>21 Q Okay.</p> <p>22 A By the way, before we get too much past this, I</p> <p>23 think in an earlier question, you may have referred to</p> <p>24 WDW385 when you asked me a question, if I heard</p> <p>25 correctly, and I knew what you meant. I assumed you</p>

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<p style="text-align: right;">1838</p> <p>1 meant WDW383, but I think possibly you said 385. I just</p> <p>2 wanted to --</p> <p>3 Q I appreciate that correction. And, yes, you're</p> <p>4 right. My questions thus far have been focused on</p> <p>5 WDW383. I thank you for catching that.</p> <p>6 If you can turn to Page 4 of WDW383. And</p> <p>7 specifically, I'm looking at the subprovision there that</p> <p>8 is labeled "C" and reads "The operating surface</p> <p>9 injection pressure shall not exceed 1,205 psig." Do you</p> <p>10 see that?</p> <p>11 A Yes.</p> <p>12 Q Okay. Did I read that provision correctly?</p> <p>13 A Yes.</p> <p>14 Q Okay. Moving down to Provision D, the permit</p> <p>15 term reads: "The maximum injection rate for this well</p> <p>16 shall not exceed 500 gallons per minute. The average</p> <p>17 cumulative rate of injection for wells WDW383 and</p> <p>18 WDW384, as calculated on a monthly basis, shall not</p> <p>19 exceed 400 gallons per minute." Did I read that</p> <p>20 provision correctly?</p> <p>21 A Yes.</p> <p>22 Q Okay. Let me get you to flip over to WDW384,</p> <p>23 if you wouldn't mind, also a part of this same exhibit.</p> <p>24 A (Witness complying.)</p> <p>25 Q Specifically, on Page No. 2 of that permit,</p>	<p style="text-align: right;">1840</p> <p>1 MR. RILEY: Sure.</p> <p>2 JUDGE WALSTON: If it's correct or not,</p> <p>3 the witness can state, if she knows.</p> <p>4 Q (BY MR. HILL) So that's the analogy I have in</p> <p>5 mind. And I'm trying to find out if UIC permits, and</p> <p>6 specifically Class I non-hazardous UIC permits,</p> <p>7 administered by TCEQ are governed under a similar type</p> <p>8 of priority system, where an older permit would have</p> <p>9 priority over a junior or more recently issued permit.</p> <p>10 A I don't have knowledge of that in our -- as</p> <p>11 part of our program.</p> <p>12 Q Have you -- in your experience in the program,</p> <p>13 have you ever seen a situation where permits are given a</p> <p>14 priority based on their date of issuance?</p> <p>15 MR. RILEY: Are we limiting the question</p> <p>16 now to UIC permits, because I'd like to be sure?</p> <p>17 Q (BY MR. HILL) Class I non-hazardous industrial</p> <p>18 wastewater permits?</p> <p>19 A Once again, could you please clarify what you</p> <p>20 mean -- or repeat the question?</p> <p>21 Q Sure, sure.</p> <p>22 In your experience in the UIC program at</p> <p>23 TCEQ, have you ever seen a situation where two Class I</p> <p>24 UIC non-hazardous permits were governed under a -- some</p> <p>25 type of priority system, where the older issued permit</p>
<p style="text-align: right;">1839</p> <p>1 Paragraph 4, the last sentence, "The authorized</p> <p>2 injection interval is within the Yegua (middle</p> <p>3 Cockfield) Formation at the approximate subsurface</p> <p>4 depths of 5,713 to 6,084 feet." Did I read that</p> <p>5 correctly?</p> <p>6 A Yes.</p> <p>7 Q Assuming, Ms. Flegal, again, that WDW383 and</p> <p>8 WDW384 are legally enforceable permits today, based on</p> <p>9 the UIC permitting program that you're a part of at</p> <p>10 TCEQ, do these permits have any priority over the</p> <p>11 permits that TexCom would receive if they're</p> <p>12 requested -- if their applications are granted?</p> <p>13 A I don't understand what you mean by "priority".</p> <p>14 Q Okay. Fair question.</p> <p>15 One analogy is -- that comes to mind is</p> <p>16 surface water permitting, where an older surface water</p> <p>17 permit in a watershed has priority over a permit that's</p> <p>18 issued more recently in time.</p> <p>19 MR. RILEY: Objection. Are we talking</p> <p>20 about water rights?</p> <p>21 MR. HILL: It's a predicate for my</p> <p>22 question.</p> <p>23 MR. RILEY: I understand that, but --</p> <p>24 okay.</p> <p>25 JUDGE WALSTON: He can ask the question.</p>	<p style="text-align: right;">1841</p> <p>1 was given a priority over a more recently issued permit?</p> <p>2 A No.</p> <p>3 Q So is it fair to say, Ms. Flegal, that</p> <p>4 assuming, again, both of these Huntsman Petrochemical</p> <p>5 Corporation permits are legally enforceable, that -- and</p> <p>6 assuming that TexCom --</p> <p>7 MR. RILEY: I'm going to object to the</p> <p>8 term "legally enforceable." Candidly, I don't even know</p> <p>9 what that means, so I don't know if we could, perhaps,</p> <p>10 at least, put some context around the words "legally</p> <p>11 enforceable." Do they exist legally? Is there a</p> <p>12 violation that could be enforced if one occurs? I don't</p> <p>13 know what legally enforceable means.</p> <p>14 JUDGE WALSTON: Well, let's hear the whole</p> <p>15 question.</p> <p>16 Go ahead and get the whole question out.</p> <p>17 MR. HILL: Thank you, Your Honors.</p> <p>18 Q (BY MR. HILL) Assuming, again, that these are</p> <p>19 valid permits -- and let me just ask you, Ms. Flegal,</p> <p>20 could you explain to me what you believe a valid permit</p> <p>21 is?</p> <p>22 And let me be more specific.</p> <p>23 Can you explain to me what you believe a</p> <p>24 Class I non-hazardous UIC permit is?</p> <p>25 A It is a permit issued by the TCEQ authorizing</p>

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<p style="text-align: right;">1842</p> <p>1 certain activity as specified in the permit.</p> <p>2 Q Okay. And so when I use the term "legally</p> <p>3 enforceable," if I adopt your definition of "valid</p> <p>4 permit," can we agree that those would be synonymous</p> <p>5 terms?</p> <p>6 A Will -- I agree.</p> <p>7 Q Okay.</p> <p>8 MR. RILEY: Thank you.</p> <p>9 Q (BY MR. HILL) So assume with me, again,</p> <p>10 Ms. Flegal, that both of the Huntsman Petrochemical</p> <p>11 Corporation UIC permits that we've been discussing here</p> <p>12 are legally enforceable and assuming that TexCom is</p> <p>13 given ultimately all four of the permits that it has</p> <p>14 requested in its current applications, is it safe to say</p> <p>15 that both permit holders would have an equal right under</p> <p>16 the terms of their permit to conduct injection</p> <p>17 operations in the specified injection intervals?</p> <p>18 A Yes.</p> <p>19 Q Continuing on with that assumption, Ms. Flegal,</p> <p>20 that both TexCom and Huntsman Petrochemical would have</p> <p>21 an equal right under the terms of their permit to</p> <p>22 conduct those injection operations that are described in</p> <p>23 their respective permits -- let me take a step back.</p> <p>24 If Huntsman Petrochemical is authorized to</p> <p>25 conduct injection operations under its existing permits</p>	<p style="text-align: right;">1844</p> <p>1 recall that?</p> <p>2 A Yes.</p> <p>3 Q If Huntsman Petrochemical Corporation is</p> <p>4 authorized to inject under WDW383 into the lower</p> <p>5 Cockfield that is in communication with the lower</p> <p>6 Cockfield that TexCom has described as the injection</p> <p>7 interval in its applications, would that pressuring</p> <p>8 created by Huntsman Petrochemical impact the overall</p> <p>9 pressuring of the lower Cockfield if both permit holders</p> <p>10 were injecting simultaneously?</p> <p>11 A Yes, possibly.</p> <p>12 Q Okay. Are you aware of any modeling that has</p> <p>13 been undertaken by any party that reflects the formation</p> <p>14 pressuring that one could expect if both Huntsman</p> <p>15 Petrochemical and TexCom were allowed to inject into the</p> <p>16 lower Cockfield simultaneously under the terms of these</p> <p>17 respective permits?</p> <p>18 A No.</p> <p>19 Q Okay.</p> <p>20 MR. HILL: If I could have just a moment,</p> <p>21 Your Honors.</p> <p>22 (Pause)</p> <p>23 Q (BY MR. HILL) Do you still have WDW383 in</p> <p>24 front of you?</p> <p>25 A Yes.</p>
<p style="text-align: right;">1843</p> <p>1 within the injection interval described in WDW383 -- and</p> <p>2 specifically, that's the permit that allows injection</p> <p>3 into the lower Cockfield -- would the injection</p> <p>4 operations undertaken by Huntsman Petrochemical create</p> <p>5 pressuring of the lower Cockfield Formation as it's</p> <p>6 authorized to inject into in the terms of that permit?</p> <p>7 A Could you please repeat the assumptions under</p> <p>8 your question?</p> <p>9 Q You bet.</p> <p>10 Let's focus our inquiry on WDW383.</p> <p>11 A Yes.</p> <p>12 Q Okay. If Huntsman Petrochemical Corporation</p> <p>13 undertakes injection activities that are authorized in</p> <p>14 WDW383, would those injection activities create</p> <p>15 pressuring in the injection interval that is described</p> <p>16 in that permit?</p> <p>17 A Yes.</p> <p>18 Q Okay. We discussed earlier that under the</p> <p>19 terms of WDW383, Huntsman Petrochemical would be</p> <p>20 authorized to inject at a maximum injection rate of</p> <p>21 500 gallons per minute. Do you recall that discussion?</p> <p>22 A Yes.</p> <p>23 Q Okay. Do you recall that TexCom has authorized</p> <p>24 to inject at a maximum injection rate of 350 gallons per</p> <p>25 minute if the requested permits are issued? Do you</p>	<p style="text-align: right;">1845</p> <p>1 Q Okay. I believe you stated earlier that you</p> <p>2 weren't sure where Huntsman Petrochemical Corporation</p> <p>3 was located specifically. Do you know with respect to</p> <p>4 the TexCom well WDW410, do you know generally where</p> <p>5 Huntsman Petrochemical Corporation is located relative</p> <p>6 to the TexCom facility?</p> <p>7 A I don't know.</p> <p>8 Q Okay. So if I were to suggest to you that</p> <p>9 Huntsman Petrochemical Corporation is north of the</p> <p>10 TexCom facility, you wouldn't have any reason to dispute</p> <p>11 that?</p> <p>12 MR. RILEY: Objection. Witness said she</p> <p>13 didn't know where the facility was.</p> <p>14 JUDGE WALSTON: Okay. I'll overrule the</p> <p>15 objection.</p> <p>16 A Could you please repeat --</p> <p>17 Q (BY MR. HILL) You bet.</p> <p>18 A -- your question?</p> <p>19 Q Sure.</p> <p>20 If I were to suggest to you that the</p> <p>21 Huntsman Petrochemical Corporation at the address that's</p> <p>22 specified there in the permit WDW383 is north of the</p> <p>23 TexCom facility, would you have any reason to dispute</p> <p>24 that?</p> <p>25 A No.</p>

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<p style="text-align: right;">1846</p> <p>1 Q Okay.</p> <p>2 MR. HILL: That's all the questions I</p> <p>3 have, Ms. Flegal. I appreciate it.</p> <p>4 Pass the witness.</p> <p>5 JUDGE WALSTON: Denbury?</p> <p>6 MS. MENDOZA: Yes.</p> <p>7 CROSS-EXAMINATION</p> <p>8 BY MS. MENDOZA:</p> <p>9 Q Good morning, Ms. Flegal. My name is Mary</p> <p>10 Mendoza, and I represent Denbury. I think we may have</p> <p>11 met at one of the depositions.</p> <p>12 A Yes. Good morning.</p> <p>13 Q Good morning. Thank you so much.</p> <p>14 I had a few other questions about your</p> <p>15 PRESS2 model.</p> <p>16 I understand you -- in terms of the -- in</p> <p>17 terms of TexCom's well, you modeled one well. Is that</p> <p>18 correct?</p> <p>19 A Yes.</p> <p>20 Q Okay. Did you model any producing wells that</p> <p>21 Denbury might have in the area?</p> <p>22 A No.</p> <p>23 Q Did you model any injecting wells that Denbury</p> <p>24 might have in the area of WDW410?</p> <p>25 A No.</p>	<p style="text-align: right;">1848</p> <p>1 Q Does your model in any way model any element of</p> <p>2 cross flow?</p> <p>3 A No, not as I understand your description.</p> <p>4 Q Thank you.</p> <p>5 Does your PRESS2 model consider any</p> <p>6 vertical permeability in the geologic features?</p> <p>7 A Could you please clarify your question?</p> <p>8 Q Do you have an understanding about what</p> <p>9 vertical permeability is?</p> <p>10 A Yes.</p> <p>11 Q Okay. And with that understanding, does your</p> <p>12 PRESS2 model incorporate any assumption about vertical</p> <p>13 permeability?</p> <p>14 A No.</p> <p>15 Q Does your PRESS2 model that you've submitted</p> <p>16 here as Executive Director 24 consider any changing zone</p> <p>17 thickness or permeability of the zone at some distance</p> <p>18 from WDW410?</p> <p>19 A I'm sorry. Could you please repeat or restate?</p> <p>20 Q Okay. Does the PRESS2 model that you've</p> <p>21 submitted as part of ED-24 consider any changing zone --</p> <p>22 injection zone thickness or permeability at some</p> <p>23 distance from WDW410?</p> <p>24 A No.</p> <p>25 I need to clarify my answer when you asked</p>
<p style="text-align: right;">1847</p> <p>1 Q At the time you ran the PRESS2 model that's</p> <p>2 part of ED-24, were you aware of the extent of Denbury's</p> <p>3 operations in the Conroe Field Unit?</p> <p>4 A No.</p> <p>5 Q Were you here during testimony that discussed</p> <p>6 the concept of cross flow within wellbores?</p> <p>7 MR. RILEY: I couldn't hear -- I'm sorry.</p> <p>8 I couldn't hear the question.</p> <p>9 MS. MENDOZA: I'm sorry.</p> <p>10 Q (BY MS. MENDOZA) Were you here in the -- here</p> <p>11 in the hearing room when some of the witnesses discussed</p> <p>12 the concept of cross flow within wellbores?</p> <p>13 A Yes.</p> <p>14 Q Okay. Does your model in any way model any</p> <p>15 element of cross flow?</p> <p>16 A I don't remember what cross flow specifically</p> <p>17 is.</p> <p>18 Q Let me try with this, then. If cross flow is</p> <p>19 the concept that a well that, perhaps, is completed in</p> <p>20 one interval is also somehow open to another interval,</p> <p>21 that would be my definition of cross flow, so that the</p> <p>22 fluids could move up and down that wellbore in between</p> <p>23 those intervals. Do you understand what I'm talking</p> <p>24 about?</p> <p>25 A Yes.</p>	<p style="text-align: right;">1849</p> <p>1 about whether my model considers vertical permeability.</p> <p>2 This model assumes an average value of permeability</p> <p>3 which would include both horizontal and vertical. It's</p> <p>4 just an average permeability value for the reservoir</p> <p>5 that it assumes -- the model assumes.</p> <p>6 Q And you assumed -- and that permeability was</p> <p>7 80.9 millidarcies?</p> <p>8 A Yes.</p> <p>9 Q And you believe 80.9 millidarcies includes an</p> <p>10 element of vertical permeability?</p> <p>11 A It's just an average permeability. It's an</p> <p>12 average permeability is all I can -- is how I would</p> <p>13 describe it.</p> <p>14 Q Do you know whether 80.9 millidarcies includes</p> <p>15 an element of vertical permeability?</p> <p>16 A The 80.9 doesn't differentiate between vertical</p> <p>17 and horizontal permeability. It's an average value.</p> <p>18 Q Do you know the vertical permeability of any</p> <p>19 portion of the injection interval?</p> <p>20 A No.</p> <p>21 Q Do you know the vertical permeability of any</p> <p>22 portion of the injection zone?</p> <p>23 A No.</p> <p>24 Q Does the PRESS2 model calculate vertical flow?</p> <p>25 A No.</p>

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<p style="text-align: right;">1850</p> <p>1 Q If TexCom were to receive the draft permits</p> <p>2 that are the subject of this hearing, is there any</p> <p>3 requirement that the injection -- the injected waste not</p> <p>4 migrate out of the injection interval into the injection</p> <p>5 zone?</p> <p>6 A No.</p> <p>7 Q And if the -- if TexCom were to receive the</p> <p>8 draft permits that are the subject of this hearing, is</p> <p>9 there any requirement to conduct monitoring that would</p> <p>10 detect movement of waste out of the injection interval</p> <p>11 into the injection zone?</p> <p>12 A I want to make absolutely sure I understand</p> <p>13 your question. Would you mind repeating it?</p> <p>14 Q Okay.</p> <p>15 If TexCom were to receive the draft</p> <p>16 permits that are the subject of this hearing, is there</p> <p>17 any requirement to conduct monitoring that would detect</p> <p>18 movement of waste out of the injection interval into the</p> <p>19 injection zone?</p> <p>20 A Mechanical integrity testing is required</p> <p>21 annually.</p> <p>22 Q Ms. Flegal, do you believe that is a</p> <p>23 requirement that relates to monitoring that would detect</p> <p>24 the movement of waste out of the injection interval into</p> <p>25 the injection zone?</p>	<p style="text-align: right;">1852</p> <p>1 Q So if I ask this question again, "Are you aware</p> <p>2 of any requirement to conduct monitoring that would</p> <p>3 detect the movement out of waste" -- "of waste out of</p> <p>4 the injection interval into the injection zone," what is</p> <p>5 your answer today?</p> <p>6 A Could you please -- you asked me am I aware.</p> <p>7 Did you --</p> <p>8 Q I will say this: If TexCom were to receive the</p> <p>9 draft permits that are the subject of this hearing, is</p> <p>10 there any requirement for TexCom to conduct monitoring</p> <p>11 that would detect movement of waste out of the injection</p> <p>12 interval into the injection zone?</p> <p>13 A No.</p> <p>14 Q Are you aware that there are permeable sands</p> <p>15 above the injection zone as specified by TexCom in its</p> <p>16 application which are between the Jackson shale and the</p> <p>17 top of the injection zone?</p> <p>18 A I'm not that familiar with the details of the</p> <p>19 geology at this time.</p> <p>20 Q Having come a little bit late to the hearing,</p> <p>21 I'm not sure that I understand fully the parts of the</p> <p>22 application that you reviewed. But were you responsible</p> <p>23 for reviewing most of TexCom's application?</p> <p>24 A Yes.</p> <p>25 Q Okay. Did you review the portion regarding who</p>
<p style="text-align: right;">1851</p> <p>1 A That testing would provide an indication of</p> <p>2 where the waste is going in the well.</p> <p>3 Q Do you remember answering discovery from</p> <p>4 Denbury in this matter?</p> <p>5 A Yes.</p> <p>6 Q And do you remember verifying that discovery?</p> <p>7 A Yes.</p> <p>8 Q And do you remember a question that I asked:</p> <p>9 Describe all monitoring TexCom will be required to</p> <p>10 perform under the proposed draft permits, if granted,</p> <p>11 and under applicable rules to confirm that the waste it</p> <p>12 will inject will not migrate out of the injection</p> <p>13 interval?</p> <p>14 A Yes.</p> <p>15 Q And do you remember answering: Subject to the</p> <p>16 following objection, the ED is not aware of any</p> <p>17 requirement that injected waste not migrate out of the</p> <p>18 injection interval into the injection zone nor of any</p> <p>19 requirement to conduct monitoring that would detect</p> <p>20 movement of waste out of the injection interval into the</p> <p>21 injection zone?</p> <p>22 A Yes.</p> <p>23 Q And is that still a true statement that you</p> <p>24 made in your response to the interrogatory?</p> <p>25 A Yes.</p>	<p style="text-align: right;">1853</p> <p>1 owns the mineral interests on the TexCom property?</p> <p>2 MR. RILEY: Objection. Mineral interests?</p> <p>3 I thought you were pretty strict about discussion of</p> <p>4 mineral interests, and so I'm asking for a similar</p> <p>5 ruling as to this question.</p> <p>6 JUDGE WALSTON: What's the relevance?</p> <p>7 MS. MENDOZA: Well, I am not going to be</p> <p>8 asking about harm to mineral interests, which is I think</p> <p>9 the topic that we have been -- or the injury to mineral</p> <p>10 interest. I am going to be asking about the</p> <p>11 ownership --</p> <p>12 MR. RILEY: And I think --</p> <p>13 MS. MENDOZA: -- of the mineral interest.</p> <p>14 MR. RILEY: Excuse me, Counsel. I</p> <p>15 apologize.</p> <p>16 I think Ms. Mendoza's going to be going</p> <p>17 into notice, which you've already ruled on, as part of</p> <p>18 her plea to the jurisdiction.</p> <p>19 JUDGE WALSTON: That was my belief as</p> <p>20 well, so what's the relevance of who the mineral</p> <p>21 interest owner is?</p> <p>22 MS. MENDOZA: Whether she believes that</p> <p>23 TexCom has told the TCEQ who is the mineral interest</p> <p>24 owner and whether there's an administratively complete</p> <p>25 application before the Commission.</p>

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<p style="text-align: right;">1854</p> <p>1 JUDGE WALSTON: Okay. I'll allow that</p> <p>2 question.</p> <p>3 MS. MENDOZA: Thank you.</p> <p>4 Q (BY MS. MENDOZA) Ms. Flegal, are you aware of</p> <p>5 a portion in the application where TexCom is required to</p> <p>6 identify the mineral interest owner of the property upon</p> <p>7 which the injection well will be located and the</p> <p>8 properties adjacent to the property upon which the</p> <p>9 mineral interest owner will be located?</p> <p>10 A Yes.</p> <p>11 Q And do you believe that TexCom has, as of</p> <p>12 today, accurately identified for you in the application</p> <p>13 the owner of the mineral interests for the property upon</p> <p>14 which TexCom's well will be located?</p> <p>15 A Yes, based on information submitted in the</p> <p>16 application.</p> <p>17 Q And in the application, TexCom identified</p> <p>18 itself as the owner of the --</p> <p>19 MR. RILEY: Objection. Objection. That's</p> <p>20 not true.</p> <p>21 JUDGE WALSTON: Well, she can ask the</p> <p>22 question; and the witness can answer it, if she knows.</p> <p>23 Q (BY MS. MENDOZA) In the application that was</p> <p>24 submitted to the TCEQ, did TexCom identify itself as the</p> <p>25 owner of the mineral interests for the property upon</p>	<p style="text-align: right;">1856</p> <p>1 MS. MENDOZA: It's a slightly different</p> <p>2 question.</p> <p>3 JUDGE WALSTON: Well, she's already</p> <p>4 prefiled her testimony, and I don't think that's a part</p> <p>5 of it. So if she hadn't testified, I'm not sure why</p> <p>6 you're asking her you can't testify about something. If</p> <p>7 you can, cite to something where she has testified about</p> <p>8 it on a cross-examination.</p> <p>9 I'll sustain to the form of the question.</p> <p>10 Q (BY MS. MENDOZA) Ms. Flegal, do you expect</p> <p>11 that Applicants provide to the TCEQ accurate information</p> <p>12 regarding the ownership of the mineral interests in the</p> <p>13 context of their TCEQ applications?</p> <p>14 MR. RILEY: Objection.</p> <p>15 A Yes.</p> <p>16 MR. RILEY: Relevance.</p> <p>17 JUDGE WALSTON: Okay. I'll overrule the</p> <p>18 objection.</p> <p>19 Q (BY MS. MENDOZA) You can -- if I could get</p> <p>20 your answer again so that the transcript is clear?</p> <p>21 A Yes.</p> <p>22 MS. MENDOZA: No further questions.</p> <p>23 JUDGE WALSTON: Individual Protestants?</p> <p>24 MR. FORSBERG: Just a few, Your Honor.</p> <p>25</p>
<p style="text-align: right;">1855</p> <p>1 which the proposed injection wells will be located?</p> <p>2 A I don't recall.</p> <p>3 MS. MENDOZA: If I can have a moment to</p> <p>4 find this portion of the application?</p> <p>5 JUDGE WALSTON: Okay.</p> <p>6 MS. MENDOZA: Well, I'll just ask you it a</p> <p>7 different way.</p> <p>8 JUDGE WALSTON: I'm assuming the</p> <p>9 application is going to speak for itself.</p> <p>10 MS. MENDOZA: Yes.</p> <p>11 JUDGE WALSTON: And we are short on time.</p> <p>12 MS. MENDOZA: Okay. I'll just do that.</p> <p>13 Q (BY MS. MENDOZA) Assume with me that TexCom</p> <p>14 identified itself as the owner of the mineral interests</p> <p>15 for the property upon which the proposed wells will be</p> <p>16 located, and assume with me further that that is</p> <p>17 incorrect. If those two assumptions are true, has</p> <p>18 TexCom submitted to the TCEQ an administratively</p> <p>19 complete application?</p> <p>20 A I don't know.</p> <p>21 Q And if those two assumptions are true, then you</p> <p>22 cannot testify here today that TexCom's application is</p> <p>23 administrative complete. Correct?</p> <p>24 MR. RILEY: Objection, asked and answered,</p> <p>25 and she said she didn't know.</p>	<p style="text-align: right;">1857</p> <p>1 CROSS-EXAMINATION</p> <p>2 BY MR. FORSBERG:</p> <p>3 Q Good morning.</p> <p>4 A Good morning.</p> <p>5 Q Do you have your prefiled testimony in front of</p> <p>6 you?</p> <p>7 A Yes.</p> <p>8 Q Okay. Could you turn to Page 7, please, of</p> <p>9 your prefiled testimony?</p> <p>10 A (Witness complying.)</p> <p>11 Q You see that page?</p> <p>12 A Yes.</p> <p>13 Q I'm looking at the question that begins on</p> <p>14 Line 22, Page 7. The question says: "You previously</p> <p>15 testified that corrective action is not required because</p> <p>16 the cone of influence is, in effect, zero."</p> <p>17 You previously -- I take it, then, you had</p> <p>18 previously testified in this matter that the cone of</p> <p>19 influence was zero. Is that your recollection -- or, in</p> <p>20 effect, zero?</p> <p>21 A No. I -- no.</p> <p>22 Q What did you take it -- I mean, you answered</p> <p>23 this question. Correct?</p> <p>24 A Yes.</p> <p>25 Q Okay. What did you take it to mean when</p>

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<p style="text-align: right;">1858</p> <p>1 it's -- the question asked: "You previously testified</p> <p>2 that corrective action is not required because the cone</p> <p>3 of influence is, in effect, zero?"</p> <p>4 A It was very small.</p> <p>5 Q Okay. Something close to zero?</p> <p>6 A Yes.</p> <p>7 Q Has that opinion changed today?</p> <p>8 A Could you please rephrase the question?</p> <p>9 Q Certainly.</p> <p>10 Do you still believe today that the cone</p> <p>11 of influence is, in effect, zero?</p> <p>12 A No.</p> <p>13 Q What has occurred that has changed your opinion</p> <p>14 in regards to the cone of influence?</p> <p>15 A Testimony that I heard in the previous hearing</p> <p>16 and also the assumptions from our Commission's remand</p> <p>17 order.</p> <p>18 Q Do you recall what testimony in the previous</p> <p>19 hearing?</p> <p>20 A Not specifically.</p> <p>21 Q Okay. Has anything -- I think you were already</p> <p>22 asked. You've been here for much of this remand</p> <p>23 hearing. Correct?</p> <p>24 A Yes.</p> <p>25 Q Has anything that has been testified to in this</p>	<p style="text-align: right;">1860</p> <p>1 Q Your opinion -- correct me if I'm wrong -- is</p> <p>2 that in your mind, artificial penetrations are not</p> <p>3 really a concern in regards to potential migration of</p> <p>4 fluids into USDWs in the TexCom permit application</p> <p>5 context?</p> <p>6 A Yes.</p> <p>7 Q Did you review any prefiled testimony or</p> <p>8 documents from anyone other than TexCom?</p> <p>9 A I have reviewed prefiled testimony documents.</p> <p>10 Q Did you review them prior to coming to your</p> <p>11 opinion as marked -- as beginning on Line 33 of Page 7?</p> <p>12 A I don't remember.</p> <p>13 Q Are there any -- was there any information that</p> <p>14 you excluded -- that you reviewed and excluded from</p> <p>15 helping you base your opinion on Line 33, Page 7?</p> <p>16 That's a bad question.</p> <p>17 When you came to your opinion that we've</p> <p>18 been talking about here with regards to artificial</p> <p>19 penetrations, did you look at anyone's testimony other</p> <p>20 than TexCom's or prefiled testimony or any documents</p> <p>21 provided by any other party that you looked at and you</p> <p>22 said, "I don't think this is right. And, therefore, I'm</p> <p>23 going to use TexCom's exhibits and prefiled testimony as</p> <p>24 opposed to something else"?</p> <p>25 A No.</p>
<p style="text-align: right;">1859</p> <p>1 remand hearing given you any reason to question your</p> <p>2 opinion in regards to the cone of influence?</p> <p>3 A No.</p> <p>4 Q And in your answer to the question on Line 22,</p> <p>5 rather than read the entire question because it's rather</p> <p>6 long, you answer "No." And then it asks for the basis</p> <p>7 of your opinion why no corrective action is needed.</p> <p>8 Correct?</p> <p>9 A Correct.</p> <p>10 Q And the basis for your opinion -- I'm</p> <p>11 summarizing. Correct me if I'm wrong -- is you cite a</p> <p>12 couple of TexCom exhibits about additional well records.</p> <p>13 You cite a portion of Greg Casey's supplemental prefiled</p> <p>14 testimony and you cite an article called "Gulf Coast</p> <p>15 Borehole Closure Well Test" -- "Test Well, Orangefield,</p> <p>16 Texas." Is that an accurate summary of what you used to</p> <p>17 make -- determine your opinion?</p> <p>18 A Yes.</p> <p>19 Q Did you review anything outside of what you</p> <p>20 identify in your answer when coming to your opinion?</p> <p>21 A I reviewed the supplemental information -- not</p> <p>22 supplemental. I guess it would be called -- I reviewed</p> <p>23 information that TexCom submitted before -- between the</p> <p>24 two hearings in regard to area of review or artificial</p> <p>25 penetrations.</p>	<p style="text-align: right;">1861</p> <p>1 Q The article you cite, "Gulf Coast Borehole</p> <p>2 Closure Test, Orangefield, Texas," where is Orangefield,</p> <p>3 Texas?</p> <p>4 A I believe it's generally somewhere in the</p> <p>5 vicinity of Orange, Texas, or Beaumont, Texas, in that</p> <p>6 general area, as I recall.</p> <p>7 Q And I think a map will tell you that you're</p> <p>8 correct.</p> <p>9 What is the geography -- or how does the</p> <p>10 geography of Orangefield, Texas, where the test well</p> <p>11 drilled and discussed in that article compare to the</p> <p>12 geology surrounding TexCom WDW410?</p> <p>13 MR. RILEY: Objection. It's really just</p> <p>14 a -- he asked -- the first part of his question was</p> <p>15 about geography comparing it to geology, if that's the</p> <p>16 question.</p> <p>17 JUDGE WALSTON: I think he just --</p> <p>18 MR. FORSBERG: That was a typo. I meant</p> <p>19 geology, yes.</p> <p>20 A Could you please repeat the question?</p> <p>21 Q (BY MR. FORSBERG) Certainly, certainly.</p> <p>22 Do you have an opinion as to how the</p> <p>23 geology of the area around the test well discussed in</p> <p>24 "Gulf Coast Borehole Closure Test Well" article that you</p> <p>25 cite compares to the geology of the WDW410 well site?</p>

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<p style="text-align: right;">1862</p> <p>1 A Yes.</p> <p>2 Q And what is that opinion?</p> <p>3 A That it's all generally Gulf Coast-type</p> <p>4 geology.</p> <p>5 Q And what do you base that opinion on?</p> <p>6 A On checking with geologists on our team.</p> <p>7 Q Do you know what an unlocated borehole refers</p> <p>8 to?</p> <p>9 A Yes. Well, maybe not in the context of your</p> <p>10 question.</p> <p>11 Q Okay. What is your understanding of what an</p> <p>12 unlocated borehole is?</p> <p>13 A A borehole that exists but doesn't appear on</p> <p>14 map -- on a Railroad Commission map or records.</p> <p>15 Q Now, you -- in your prefiled testimony, you</p> <p>16 found a cone of influence now of 2.8 miles. Is that</p> <p>17 correct?</p> <p>18 A Correct.</p> <p>19 Q If there are unlocated boreholes or an</p> <p>20 unlocated borehole within that 2-point-mile radius -- or</p> <p>21 sorry -- cone of influence, would that be of any concern</p> <p>22 to you in terms of the TexCom applications?</p> <p>23 A I'm not sure without further information.</p> <p>24 Q So there is a potential that with some amount</p> <p>25 of information, an unlocated borehole within the cone of</p>	<p style="text-align: right;">1864</p> <p>1 phones. And if they're close to a mic, turn them off</p> <p>2 because apparently that's what's causing the static, or</p> <p>3 move them far away.</p> <p>4 MR. RILEY: Yeah. We apparently turned</p> <p>5 everything off except for one, which is way over there.</p> <p>6 Q (BY MR. FORSBERG) Did you find the section you</p> <p>7 were wanting to look at?</p> <p>8 A Yes, I did.</p> <p>9 Q Okay. And could -- just for the record to be</p> <p>10 clear, what are you referring to?</p> <p>11 A 30 TAC 331.121(a)(2)(A). And the specific</p> <p>12 information I was looking for is that only information</p> <p>13 of public record is required to be included on this map.</p> <p>14 Q And help me understand. I believe my question</p> <p>15 was what information you would need in order to</p> <p>16 determine if a unlocated borehole was a concern to you</p> <p>17 in relation to the TexCom proposed wells. How does</p> <p>18 that -- how does the information you just located in the</p> <p>19 TAC reflect an answer to my question?</p> <p>20 A That information of public record is what we</p> <p>21 consider in our review of artificial penetrations.</p> <p>22 Q Are unlocated boreholes a matter of public</p> <p>23 record?</p> <p>24 A Presumably not.</p> <p>25 Q Are you saying, therefore, that unlocated</p>
<p style="text-align: right;">1863</p> <p>1 influence could cause you concern?</p> <p>2 A I reviewed the application in the context of</p> <p>3 the rules that require records that are publicly</p> <p>4 available to be submitted on this subject, on the</p> <p>5 subject of artificial penetrations.</p> <p>6 Q Okay. And I think my question was: You know,</p> <p>7 with some amount of information, is there a situation</p> <p>8 that you can foresee or identify, in your mind, where an</p> <p>9 unlocated borehole would cause you concern in the</p> <p>10 context of TexCom's proposed WDW410 and the three</p> <p>11 additional wells they're seeking?</p> <p>12 A Yes.</p> <p>13 Q Okay. What information would you need in</p> <p>14 order -- in your mind, what information do you need in</p> <p>15 order to determine if there is a concern with unlocated</p> <p>16 boreholes in relation to the TexCom well application?</p> <p>17 A I would like to refer to 30 TAC, Chapter 331,</p> <p>18 and refresh my memory about a rule dealing with</p> <p>19 artificial penetrations.</p> <p>20 Q I have no problem with that, if someone has</p> <p>21 that handy.</p> <p>22 MR. REDMOND: May I approach?</p> <p>23 JUDGE WALSTON: Yes.</p> <p>24 (Pause)</p> <p>25 JUDGE EGAN: Could everyone check their</p>	<p style="text-align: right;">1865</p> <p>1 boreholes are not considered by TCEQ?</p> <p>2 I may just be misunderstanding. I'm not</p> <p>3 trying to be...</p> <p>4 A According to the rules, only information of</p> <p>5 public record is required to be included.</p> <p>6 Q So is it your position that in regards to your</p> <p>7 review of the TexCom applications, unlocated boreholes</p> <p>8 are not even considered in the determination as to</p> <p>9 whether they -- there's a potential threat to</p> <p>10 underground sources of drinking water?</p> <p>11 A Could you please restate the question?</p> <p>12 Q Sure.</p> <p>13 MR. RILEY: I guess I have an objection.</p> <p>14 I don't -- I'm having trouble conceptually in discussing</p> <p>15 unlocated boreholes because that presumes that no one</p> <p>16 knows them to be there. So if they're known, then they</p> <p>17 can become part of the record, but we're talking about</p> <p>18 an unlocated thing and asking the witness about an</p> <p>19 unlocated borehole. I mean, how would one have an</p> <p>20 unlocated borehole to discuss?</p> <p>21 JUDGE WALSTON: I think he's about to</p> <p>22 restate his question. And if the witness can answer it,</p> <p>23 fine. If you can't, that's fine as well.</p> <p>24 MR. FORSBERG: Okay.</p> <p>25 JUDGE WALSTON: I think didn't you ask him</p>

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<p style="text-align: right;">1866</p> <p>1 to restate his question?</p> <p>2 WITNESS FLEGAL: Yes, please.</p> <p>3 Q (BY MR. FORSBERG) And let me start -- let me</p> <p>4 go this way with it.</p> <p>5 Does the Applicant have to provide you or</p> <p>6 TCEQ in their application any information with regards</p> <p>7 to unlocated boreholes for Class I UIC wells?</p> <p>8 A No.</p> <p>9 MR. FORSBERG: Just give me one second,</p> <p>10 Your Honor.</p> <p>11 (Pause)</p> <p>12 Q (BY MR. FORSBERG) Can you turn -- or do you</p> <p>13 have access to 30 TAC 331.121 in front of you?</p> <p>14 A Yes.</p> <p>15 Q Specifically, I'm looking at (c)(4)(A).</p> <p>16 A Yes.</p> <p>17 (Laughter)</p> <p>18 Q (BY MR. FORSBERG) Do you see the section that</p> <p>19 begins "The confining zone is separated from the base of</p> <p>20 the lowermost USDW"? Are we reading at the same spot</p> <p>21 here?</p> <p>22 A Yes.</p> <p>23 Q Okay. And I believe the Section 4 states</p> <p>24 331.121(c)(4)(A), "The owner or operator shall</p> <p>25 demonstrate to the satisfaction of the Executive</p>	<p style="text-align: right;">1868</p> <p>1 whether to issue a Class I UIC well permit?</p> <p>2 A Yes.</p> <p>3 Q To your satisfaction, has TexCom shown you</p> <p>4 enough information about unlocated boreholes that you</p> <p>5 have no concern over whether they pose a threat to</p> <p>6 underground sources of drinking water in relation to the</p> <p>7 TexCom applications we're here about today?</p> <p>8 MR. RILEY: Objection. I think that the</p> <p>9 rule actually talks more about geology if there was an</p> <p>10 unlocated borehole. Not information about unlocated</p> <p>11 boreholes but about the geologic stratum separating the</p> <p>12 USDW.</p> <p>13 JUDGE WALSTON: Right. I -- in addition</p> <p>14 to that, I had a problem with your question asking about</p> <p>15 the location of unlocated boreholes. I mean, that's</p> <p>16 inherently --</p> <p>17 (Laughter)</p> <p>18 MR. FORSBERG: Well -- but the problem --</p> <p>19 I mean, if they exist within the -- I mean, I realize</p> <p>20 that the words don't match up, but the rule here clearly</p> <p>21 states that they must exist; and, therefore -- or that</p> <p>22 they may exist; and, therefore, they must or may be</p> <p>23 located somewhere. So there may be a location of an</p> <p>24 unlocated borehole.</p> <p>25 MR. RILEY: Okay.</p>
<p style="text-align: right;">1867</p> <p>1 Director that," Subsection A, "the confining zone is</p> <p>2 separated from the base of the lowermost USDW or</p> <p>3 freshwater aquifer by at least one sequence of permeable</p> <p>4 and less permeable strata that will provide an added</p> <p>5 layer of protection for the USDW or freshwater aquifer</p> <p>6 in the event of fluid movement in an unlocated borehole</p> <p>7 or transmissive fault." Did I read that correctly?</p> <p>8 A Yes.</p> <p>9 Q What information has been provided to you by</p> <p>10 Applicant TexCom in regard to potential fluid movement</p> <p>11 in unlocated boreholes?</p> <p>12 A I'm not recalling any.</p> <p>13 Or let me qualify that. A discussion of</p> <p>14 artificial penetrations addresses that in some way.</p> <p>15 Q All right. Would you agree with me that based</p> <p>16 upon reading the rule that we just read, that unlocated</p> <p>17 boreholes is part of what an applicant must discuss to</p> <p>18 satisfy the Executive Director prior to the issuing of a</p> <p>19 Class I UIC permit?</p> <p>20 A Could you please repeat your question? I'm not</p> <p>21 sure I followed it specifically.</p> <p>22 Q Sure.</p> <p>23 Based upon the rule we just read, is it</p> <p>24 now your understanding that unlocated boreholes are part</p> <p>25 of what should be considered by TCEQ in determining</p>	<p style="text-align: right;">1869</p> <p>1 JUDGE WALSTON: But it doesn't --</p> <p>2 MR. RILEY: I'm sorry.</p> <p>3 JUDGE WALSTON: I tend to agree with</p> <p>4 Mr. Riley that the real purpose of the rule is whether</p> <p>5 or not there is a sequence of permeable or less</p> <p>6 permeable sands to take into account the possibility of</p> <p>7 unlocated boreholes. I mean, that seems to be the</p> <p>8 purpose of the rule.</p> <p>9 I thought you were asking her about</p> <p>10 information -- providing information on the location of</p> <p>11 unlocated boreholes.</p> <p>12 MR. FORSBERG: No, where I was just -- I</p> <p>13 was trying to get to questions of -- as I asked her</p> <p>14 earlier, that she seemed to think -- or I may have</p> <p>15 misinterpreted the testimony -- that unlocated boreholes</p> <p>16 played no part in the issuance of a UIC I application,</p> <p>17 and I was just trying to --</p> <p>18 JUDGE WALSTON: Why don't you try to</p> <p>19 rephrase your question --</p> <p>20 MR. FORSBERG: Can I --</p> <p>21 JUDGE WALSTON: -- because I think you</p> <p>22 were asking about do they provide information on the</p> <p>23 location of unlocated boreholes was actually the literal</p> <p>24 wording of your question.</p> <p>25 MR. FORSBERG: Yeah, if I did say that,</p>

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<p style="text-align: right;">1870</p> <p>1 then that was a horrible question.</p> <p>2 JUDGE WALSTON: Right.</p> <p>3 MR. FORSBERG: I completely agree.</p> <p>4 JUDGE WALSTON: Right.</p> <p>5 Q (BY MR. FORSBERG) Okay. As you sit here</p> <p>6 today, do you have any concern about potential unlocated</p> <p>7 boreholes in the 2.8-mile cone of influence that you</p> <p>8 modeled?</p> <p>9 A No.</p> <p>10 Q And why is that?</p> <p>11 A Because I understand from the geologists that</p> <p>12 the citing criteria for this site were meant, and I</p> <p>13 believe that includes the subparagraph that we've been</p> <p>14 looking at.</p> <p>15 Q And which geologists are you referring to?</p> <p>16 A John Santos did the review of the geologic</p> <p>17 siting criteria.</p> <p>18 Q Did you ever have any discussion with him about</p> <p>19 unlocated boreholes?</p> <p>20 A Not that I can recall.</p> <p>21 Q Prior to today, do you recall ever looking at</p> <p>22 the issue of unlocated boreholes in relation to the</p> <p>23 TexCom application?</p> <p>24 A No.</p> <p>25 Well, let me -- I'm not real sure I</p>	<p style="text-align: right;">1872</p> <p>1 A No.</p> <p>2 Q Do you believe that that's a determination that</p> <p>3 does not need to be made by you or anyone in your</p> <p>4 department in whether or not TexCom should be allowed to</p> <p>5 have the permits for their Class I UIC wells that we're</p> <p>6 here about?</p> <p>7 A Are you asking do I believe that it's not --</p> <p>8 was there a double negative in there?</p> <p>9 Q Quite possibly, I don't know.</p> <p>10 A I'm sorry.</p> <p>11 Q I didn't do well in English class.</p> <p>12 A I'm sorry, I -- I got --</p> <p>13 Q Okay.</p> <p>14 A -- lost in the --</p> <p>15 Q Let me restate it. And we've all been here a</p> <p>16 long time, so I apologize --</p> <p>17 A Yes.</p> <p>18 Q -- if my questions are fluttering a little bit.</p> <p>19 Do you believe that at any point prior to</p> <p>20 TexCom -- you know, assuming TexCom's permit</p> <p>21 applications are approved, do you believe at any point</p> <p>22 between now and that time, that you will make a</p> <p>23 determination as to whether or not there is</p> <p>24 communication between the Cockfield sands?</p> <p>25 A I don't know.</p>
<p style="text-align: right;">1871</p> <p>1 understood your question. Could you please rephrase it</p> <p>2 or...</p> <p>3 Q I believe my question was: Prior to today,</p> <p>4 have you -- or do you have any recollection of ever</p> <p>5 looking at the issue of unlocated boreholes in regards</p> <p>6 to the TexCom Class I UIC application?</p> <p>7 A In the context of the Dupont study, yes.</p> <p>8 Q And that was the article that you cite in -- on</p> <p>9 Page 7 of your prefiled testimony. Correct?</p> <p>10 A Yes.</p> <p>11 Q Other than that article, is there anything else</p> <p>12 that you have looked at in regards to unlocated</p> <p>13 boreholes with regards to the TexCom Class I UIC</p> <p>14 application?</p> <p>15 A Not that I can recall.</p> <p>16 Q As you sit here today, do you believe that</p> <p>17 there is any communication between the Cockfield sands?</p> <p>18 A I haven't made that determination.</p> <p>19 Q Is that a determination you plan to make or</p> <p>20 just one that's not part of your work on this project?</p> <p>21 A I'm not sure I understand the two options</p> <p>22 there. The -- I'm not sure I understand the question.</p> <p>23 Q Well, do you have any plans to determine</p> <p>24 yourself whether there is any communication between the</p> <p>25 Cockfield sands?</p>	<p style="text-align: right;">1873</p> <p>1 Q Okay. Do you believe that that's a</p> <p>2 determination that needs to be made by anyone prior to</p> <p>3 the proposed permits being issued?</p> <p>4 A Possibly.</p> <p>5 Q And what are the circumstances that would need</p> <p>6 to arise for that determination to be needed in order</p> <p>7 for TexCom's permits to be issued?</p> <p>8 A Possibly in reviewing the testimony and all of</p> <p>9 the information in this -- on this subject, in the</p> <p>10 preparation of future documents to be filed, possibly</p> <p>11 that subject could come under consideration.</p> <p>12 Q Okay. As you sit here today, could you foresee</p> <p>13 a circumstance -- well, let me step one step back.</p> <p>14 Is it your opinion, as you sit here today,</p> <p>15 that TexCom has met the requirements for the issuance of</p> <p>16 the permits for WDW410 and the related wells?</p> <p>17 A Yes.</p> <p>18 Q Okay. Do you see any information -- or any</p> <p>19 potential that -- based upon your review of testimony</p> <p>20 and additional documents, that your opinion could ever</p> <p>21 change with regards to whether or not TexCom has met the</p> <p>22 criteria for the issuance of permits for WDW410 and</p> <p>23 related wells?</p> <p>24 A I don't know.</p> <p>25 Q Does that mean it is possible or that there is</p>

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<p style="text-align: right;">1874</p> <p>1 nothing that would change your opinion from this point 2 forward?</p> <p>3 A It is possible if new information -- it is 4 possible.</p> <p>5 Q Okay. Is your technical review of TexCom's 6 application complete, then?</p> <p>7 MR. RILEY: Objection. Are we speaking in 8 regulatory terms because there is a point in time when 9 technical review concludes.</p> <p>10 JUDGE WALSTON: Yeah, why don't you 11 rephrase or clarify your question. I do believe 12 Mr. Riley's correct.</p> <p>13 MR. FORSBERG: Okay.</p> <p>14 Q (BY MR. FORSBERG) Can you explain to me what a 15 technical review is, in your mind, of an -- of a Class I 16 UIC application?</p> <p>17 A It's the process of reviewing the technical 18 information submitted in the application.</p> <p>19 Q Okay. Have you completed that review that you 20 just talked about in terms of TexCom's applications that 21 we're here about today?</p> <p>22 A In the context of -- yes.</p> <p>23 Q So even though your technical -- and I'm just 24 trying to understand.</p> <p>25 Even though your technical review, you</p>	<p style="text-align: right;">1876</p> <p>1 Q Does it include documents or testimony that you 2 have heard in this hearing?</p> <p>3 A Yes.</p> <p>4 Q Is it possible that -- and I'm not saying 5 probable or any -- I'm just saying is it possible that 6 upon your review of those documents and testimony, that 7 your opinions may change in regards to these pending 8 well applications?</p> <p>9 A Yes.</p> <p>10 MR. FORSBERG: Can I just have one minute?</p> <p>11 (Pause)</p> <p>12 MR. FORSBERG: I'm actually, Your Honor, 13 at this time somewhat in fear of having things thrown at 14 me. I would like to make --</p> <p>15 (Laughter)</p> <p>16 MR. FORSBERG: I would like to make a 17 motion that we continue this hearing until such time as 18 an actual review of the application has been complete. 19 She's stated -- this is our only chance with this 20 witness. She's stated that she has identified 21 information that she would like to review to complete 22 her -- she couldn't identify pieces specific, but she 23 said there is information she wants to review in order 24 to make a final determination in regards to these 25 applications. It doesn't sound like the staff at TCEQ</p>
<p style="text-align: right;">1875</p> <p>1 just stated -- as you described, the technical review is 2 complete, there's still a potential that additional 3 information could change your opinion?</p> <p>4 A Yes.</p> <p>5 Q And what information do you plan on reviewing?</p> <p>6 MS. GOSS: I'm sorry. I'm going to have 7 to object. Calls for speculation.</p> <p>8 MR. FORSBERG: I haven't even finished my 9 question.</p> <p>10 JUDGE WALSTON: Go ahead and finish your 11 question. Let's try and speed it up, though. We are 12 taking -- it's a long, slow process.</p> <p>13 MR. FORSBERG: No, I completely 14 understand. I think -- I'm just trying to understand 15 where she's coming from and what she still has to look 16 at.</p> <p>17 Q (BY MR. FORSBERG) Have you made a 18 determination that when this hearing concludes, that 19 there are pieces of information that you plan to go back 20 and review?</p> <p>21 A Yes.</p> <p>22 Q Okay. And what are those pieces of 23 information?</p> <p>24 A I can't say specifically. I don't know 25 specifically.</p>	<p style="text-align: right;">1877</p> <p>1 has completed its review of this application at this 2 juncture. She said there's a possibility --</p> <p>3 JUDGE WALSTON: I'll deny it. In all 4 their cases, after the hearing concludes, they go back 5 and review all the testimony and evidence. As I 6 understand their process and I believe it's even part of 7 their filing their briefs, they go back and analyze it 8 and --</p> <p>9 MR. FORSBERG: Okay. I just wanted to 10 make a motion.</p> <p>11 JUDGE WALSTON: That motion will be 12 denied.</p> <p>13 MR. FORSBERG: Okay. And I pass the 14 witness, Your Honor.</p> <p>15 JUDGE WALSTON: All right. Mr. Walker?</p> <p>16 MR. WALKER: Yes, Your Honor -- I'm 17 sorry -- yes, Your Honor, I do have a number of 18 questions.</p> <p>19 MS. GOSS: Your Honor?</p> <p>20 JUDGE WALSTON: Yes.</p> <p>21 MS. GOSS: Could we possibly have a 22 morning break?</p> <p>23 JUDGE WALSTON: Sure. We'll make it kind 24 of a -- well, not too quick. But we'll come back at -- 25 we'll go off the record. We'll come back at 10 after</p>

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<p style="text-align: right;">1878</p> <p>1 10:00.</p> <p>2 (Recess: 9:53 a.m. to 10:10 a.m.)</p> <p>3 JUDGE WALSTON: We're back on the record.</p> <p>4 Mr. Walker?</p> <p>5 MR. WALKER: Thank you, Your Honor.</p> <p>6 CROSS-EXAMINATION</p> <p>7 BY MR. WALKER:</p> <p>8 Q Ms. Flegal, good morning.</p> <p>9 A Good morning.</p> <p>10 Q Ms. Flegal, I looked at your prefiled</p> <p>11 testimony, and I see that you are listed as the project</p> <p>12 manager for, I guess, this application.</p> <p>13 A Yes.</p> <p>14 Q Could you briefly tell us -- and I'm not</p> <p>15 looking for any kind of long description, but briefly</p> <p>16 tell us what your duties as project manager involve.</p> <p>17 A I would like to refer to my -- well, it's</p> <p>18 described in my prefiled testimony from the first</p> <p>19 hearing.</p> <p>20 MS. GOSS: May I approach, Your Honors?</p> <p>21 JUDGE WALSTON: Yes.</p> <p>22 Q (BY MR. WALKER) Ms. Flegal, I think I might be</p> <p>23 able to assist you in quickly finding that section, if</p> <p>24 you might want to look at Page 6 of 25 of your prefiled</p> <p>25 testimony from the first hearing.</p>	<p style="text-align: right;">1880</p> <p>1 agency, TCEQ, in what might be referred to as a</p> <p>2 certified or verified, if not sworn, manner?</p> <p>3 A Yes.</p> <p>4 Q Why is that?</p> <p>5 A It establishes responsibility for the</p> <p>6 information in the application, and specifically, the</p> <p>7 signature pages that are associated with an application.</p> <p>8 And I'm referring to the overall signature page for the</p> <p>9 application and also the technical report signature</p> <p>10 page, those pages describe on there what -- who is</p> <p>11 responsible and for what.</p> <p>12 Q All right. Thank you for making reference to</p> <p>13 that, Ms. Flegal.</p> <p>14 The signature page, which, if I may assist</p> <p>15 you here, begins with language "I certify under penalty</p> <p>16 of law," and there's a paragraph there. Is that what</p> <p>17 you're referring to with respect to the certification or</p> <p>18 verification of the application?</p> <p>19 MR. RILEY: Okay. I'm sorry, Counsel.</p> <p>20 MS. MENDOZA: Would you --</p> <p>21 MR. RILEY: Could you tell me what you're</p> <p>22 looking at? Is this -- I was on the prefiled, and so if</p> <p>23 there's another exhibit with a certification, that's</p> <p>24 what I'm trying to find out.</p> <p>25 MR. WALKER: Your Honor, if I may approach</p>
<p style="text-align: right;">1879</p> <p>1 A Thank you.</p> <p>2 JUDGE EGAN: You have the exhibit number?</p> <p>3 MS. FORLANO: 5.</p> <p>4 JUDGE EGAN: Thank you.</p> <p>5 MR. WALKER: Exhibit No. 5 from the first</p> <p>6 hearing, Your Honor.</p> <p>7 A Yes.</p> <p>8 Q (BY MR. WALKER) I believe you've testified,</p> <p>9 Ms. Flegal, that with a couple of specific exceptions,</p> <p>10 specifically Section 5, geology, and some of Section 7,</p> <p>11 reservoir characteristics, otherwise, would you agree</p> <p>12 with me, you're responsible for other aspects of the</p> <p>13 application -- reviewing the application?</p> <p>14 A Yes.</p> <p>15 MR. RILEY: Could -- I apologize for the</p> <p>16 interruption. In our version, ED-5 is an exhibit. Is</p> <p>17 there -- it's a letter or a memo.</p> <p>18 MS. FORLANO: I'm sorry. It's ED-1.</p> <p>19 MR. RILEY: ED-1. Okay. Thank you.</p> <p>20 MS. FORLANO: I apologize.</p> <p>21 MR. WALKER: Apologize for that little</p> <p>22 confusion.</p> <p>23 Q (BY MR. WALKER) Let me ask you, Ms. Flegal:</p> <p>24 Is there a requirement that the application, I suppose,</p> <p>25 as a whole, that the application be presented to the</p>	<p style="text-align: right;">1881</p> <p>1 the witness?</p> <p>2 JUDGE WALSTON: Yeah.</p> <p>3 MR. RILEY: And as you pass by, David,</p> <p>4 would you mind just showing me the page so I can --</p> <p>5 MR. WALKER: It's Page 2 of 314, TexCom</p> <p>6 Exhibit 6.</p> <p>7 MR. RILEY: Thank you.</p> <p>8 MS. GOSS: Mr. Walker, may I please see</p> <p>9 the exhibit?</p> <p>10 MR. WALKER: I'm sorry.</p> <p>11 MS. GOSS: No problem. TexCom Exhibit 6,</p> <p>12 Page 2 of 314.</p> <p>13 Q (BY MR. WALKER) Ms. Flegal, I've showed you</p> <p>14 what's been marked as Aligned Protestants' Exhibit 15,</p> <p>15 which I believe is the signature page, again, repeating</p> <p>16 what Ms. Goss has said, Page 2 of 314, TexCom Exhibit 6</p> <p>17 of the permit application. Do you recognize that</p> <p>18 document?</p> <p>19 A Yes.</p> <p>20 Q Ms. Flegal, is that what we've referred to as</p> <p>21 the signature page?</p> <p>22 A Yes.</p> <p>23 Q As project manager, Ms. Flegal, would it be</p> <p>24 important to you that an applicant present accurate and</p> <p>25 reliable information in its application?</p>

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1882	<p>1 A Yes.</p> <p>2 Q In that regard, would you expect an applicant</p> <p>3 to present reliable and accurate information?</p> <p>4 A Yes.</p> <p>5 Q Why is that important?</p> <p>6 A Because we rely on the information in the</p> <p>7 application in determining whether the application</p> <p>8 complies with the rules and statutes.</p> <p>9 Q I think that you have touched upon this just</p> <p>10 briefly momentarily -- a few moments ago. Is there a</p> <p>11 point in time when an application is no longer subject</p> <p>12 to review and examination by the executive director and</p> <p>13 staff?</p> <p>14 A Yes.</p> <p>15 Q With respect to the TexCom application pending</p> <p>16 before the honorable judges today, has that point been</p> <p>17 reached?</p> <p>18 MS. GOSS: I'm sorry. Can we clarify</p> <p>19 which application? I mean, the surface facility or the</p> <p>20 UIC permits?</p> <p>21 MR. WALKER: Thank you. I'll be glad to</p> <p>22 restate the question.</p> <p>23 Q (BY MR. WALKER) Ms. Flegal, with respect to</p> <p>24 both applications, the underground injection well</p> <p>25 facility application and the surface application, has</p>	1884	<p>1 materials that were actually filed, or are you asking</p> <p>2 her about all the information in the case --</p> <p>3 MR. WALKER: Thank you, Judge.</p> <p>4 JUDGE WALSTON: -- for the application?</p> <p>5 That's where I was struggling with it.</p> <p>6 MR. WALKER: Thank you, Judge. I'll be</p> <p>7 glad to restate the question.</p> <p>8 Q (BY MR. WALKER) With respect to all of the</p> <p>9 information supplied by TexCom in this case,</p> <p>10 administrative information, the information that is your</p> <p>11 duty to review and supervise the receipt of, if you</p> <p>12 will, has your review or the executive director's review</p> <p>13 of all of that information towards approval of the</p> <p>14 permit, has that review been completed as of today?</p> <p>15 A Yes, as I understand what you're asking.</p> <p>16 Q Ms. Flegal, I apologize for, perhaps, not being</p> <p>17 clear.</p> <p>18 Once the testimony is completed in this</p> <p>19 case, once the briefing has been completed, will you</p> <p>20 make a recommendation to the executive director as to</p> <p>21 whether or not the permit should be approved?</p> <p>22 A Yes.</p> <p>23 Q Have you reached the point yet of making that</p> <p>24 recommendation?</p> <p>25 A I have made a recommendation.</p>
1883	<p>1 that point been reached where no further review or</p> <p>2 examination will be undertaken by staff and the</p> <p>3 executive director?</p> <p>4 MR. RILEY: Well, I don't mean to belabor</p> <p>5 this, but there's a point in time that's determined by</p> <p>6 rule of when technical review concludes and it triggers</p> <p>7 other legal requirements. So assuming we're not talking</p> <p>8 about that point in time because that's behind us, I</p> <p>9 have no problem with the question. But there is an</p> <p>10 actual regulatory definition of "the end of technical</p> <p>11 review."</p> <p>12 MR. WALKER: Your Honor -- thank you for</p> <p>13 that clarification -- I did not limit my question to</p> <p>14 technical review, but I'll be glad to state that.</p> <p>15 Q (BY MR. WALKER) With the exception of</p> <p>16 technical review but with respect to the overall total</p> <p>17 application, is there a point in time when that review</p> <p>18 and examination has completed?</p> <p>19 A Yes.</p> <p>20 Q Has that point been reached yet in this</p> <p>21 application, the surface facility and the underground</p> <p>22 injection well facility?</p> <p>23 A I don't understand the question.</p> <p>24 JUDGE WALSTON: And I was trying to wonder</p> <p>25 if maybe part of the confusion is the application</p>	1885	<p>1 MR. WALKER: May I approach the witness,</p> <p>2 Your Honor?</p> <p>3 JUDGE WALSTON: Yes.</p> <p>4 MR. WALKER: What I propose to show to the</p> <p>5 witness are Aligned Protestants' Exhibits 13 and 14.</p> <p>6 Aligned Protestants' Exhibit 13 are two pages from the</p> <p>7 application, TexCom Exhibit 6, Pages 4 and 5 of 314.</p> <p>8 Aligned Protestants' Exhibit 14 are two pages from the</p> <p>9 application, TexCom Exhibit 20, Pages 13 and 14.</p> <p>10 MS. GOSS: I'm sorry, Mr. Walker. Are</p> <p>11 there annotations on those pages made by the Aligned</p> <p>12 Protestants?</p> <p>13 MR. WALKER: No, none at all other than</p> <p>14 the --</p> <p>15 MS. GOSS: I thought I saw highlighting or</p> <p>16 yellow marker.</p> <p>17 MR. WALKER: Oh, I'm sorry. Well, there</p> <p>18 is highlighting. Would you like to see that?</p> <p>19 MS. GOSS: Yes, please.</p> <p>20 MR. RILEY: As you pass back this way, if</p> <p>21 you could drop by. Thank you.</p> <p>22 MR. WALKER: My I proceed, Your Honor?</p> <p>23 JUDGE WALSTON: Yes.</p> <p>24 Q (BY MR. WALKER) Ms. Flegal, if you would look</p> <p>25 at Aligned Protestants' Exhibit 13, on Page 5, which I</p>

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<p style="text-align: right;">1886</p> <p>1 believe is the second page, do you see a portion there</p> <p>2 highlighted in yellow?</p> <p>3 A Yes.</p> <p>4 Q Ms. Flegal, is that, in fact, a representation</p> <p>5 that TexCom is the owner of the mineral rights at the</p> <p>6 facility?</p> <p>7 A Yes.</p> <p>8 Q Ms. Flegal, would you look at Aligned</p> <p>9 Protestants' Exhibit 14.</p> <p>10 A (Witness complying.)</p> <p>11 Q And if you would turn to the second page, which</p> <p>12 I believe is at the bottom marked Page 14, do you see a</p> <p>13 highlighted portion on that page?</p> <p>14 A Yes.</p> <p>15 Q And is that, in fact, a representation that</p> <p>16 TexCom owns the mineral rights at the facility?</p> <p>17 A Yes.</p> <p>18 Q Now, Ms. Flegal, would you agree with me that</p> <p>19 those two portions that you've just reflected upon</p> <p>20 constitute representations in the application by TexCom</p> <p>21 that you, perhaps, would be asked to rely upon?</p> <p>22 A Yes.</p> <p>23 Q Ms. Flegal, I think that you have testified</p> <p>24 that you've been here through most of the hearing. Is</p> <p>25 that correct?</p>	<p style="text-align: right;">1888</p> <p>1 application by TexCom, would you make any kind of</p> <p>2 recommendation or suggest any course of action or</p> <p>3 discuss this issue with the Executive Director?</p> <p>4 MR. RILEY: Objection. There's not an</p> <p>5 issue to discuss that I've heard. We've -- Your Honors</p> <p>6 have precluded testimony on mineral rights ownership.</p> <p>7 This is not the sum total of any mineral rights</p> <p>8 information in the application, what counsel has</p> <p>9 directed the witness's attention to. So I'm --</p> <p>10 JUDGE WALSTON: I'll sustain the</p> <p>11 objection. And I know we've gotten into a lot of</p> <p>12 things, but we need to bring ourselves back around that</p> <p>13 this is a remand hearing, and the ownership of minerals</p> <p>14 is not an issue in remand. And we've already denied the</p> <p>15 motion -- or the plea to the jurisdiction, so I'll</p> <p>16 sustain the objection.</p> <p>17 MR. WALKER: Thank you, Your Honor. And</p> <p>18 for the record, let me try to clarify that I'm not</p> <p>19 trying to inquire into issues involving the mineral</p> <p>20 rights ownership. I'm not trying to go down a path into</p> <p>21 mineral rights ownership. I'm asking this witness</p> <p>22 whether or not she has completed her review today and in</p> <p>23 the future of the administrative information and the</p> <p>24 totality of information that has been presented in this</p> <p>25 application. That's what I'm trying to address.</p>
<p style="text-align: right;">1887</p> <p>1 A Correct.</p> <p>2 Q Does that mean that, at least, from time to</p> <p>3 time, you might have stepped out for a moment or two?</p> <p>4 A Yes.</p> <p>5 Q Would it be fair to say, though, Ms. Flegal,</p> <p>6 that you have been here throughout most of the hearing?</p> <p>7 A Yes.</p> <p>8 Q Have you encountered any information during</p> <p>9 your time here at the hearing that would cause you to</p> <p>10 subsequently address the issue of the mineral rights</p> <p>11 ownership in any kind of recommendation to the Executive</p> <p>12 Director?</p> <p>13 MR. RILEY: Objection. I thought mineral</p> <p>14 rights weren't a part of this case, so I'm going to</p> <p>15 offer that objection and see how I do.</p> <p>16 MR. WALKER: Your Honor, let me restate</p> <p>17 the question, Your Honor.</p> <p>18 JUDGE WALSTON: Okay.</p> <p>19 Q (BY MR. WALKER) Please, if you would,</p> <p>20 Ms. Flegal, and I know you're listening carefully, but</p> <p>21 let me try to address this question carefully.</p> <p>22 Having been present through most of the</p> <p>23 hearing, are you possessed of any information now that</p> <p>24 would cause you to address the issue of the mineral</p> <p>25 rights representation that has been made in the</p>	<p style="text-align: right;">1889</p> <p>1 JUDGE WALSTON: If you want to ask it that</p> <p>2 way, I probably wouldn't sustain the objection. But</p> <p>3 directing it specifically to mineral interests, I</p> <p>4 sustain the objection.</p> <p>5 MR. WALKER: Thank you, Your Honor.</p> <p>6 Q (BY MR. WALKER) Ms. Flegal, if I may direct</p> <p>7 your attention, then, to the representations that have</p> <p>8 been made on Aligned Protestants' Exhibits 13 and 14</p> <p>9 that you have there in front of you, the representations</p> <p>10 that you've just reflected upon.</p> <p>11 MR. RILEY: Objection. Those are the</p> <p>12 mineral interests.</p> <p>13 JUDGE WALSTON: Yes, and I sustained.</p> <p>14 (Laughter)</p> <p>15 Q (BY MR. WALKER) Do you believe today, based on</p> <p>16 your participation in this hearing, Ms. Flegal, that</p> <p>17 those representations today are true?</p> <p>18 MR. RILEY: Objection.</p> <p>19 MS. GOSS: Objection, calls for a legal</p> <p>20 conclusion.</p> <p>21 JUDGE WALSTON: And I'll sustain the</p> <p>22 objection because as I recall, there's been no evidence</p> <p>23 admitted on the issue. There have been contentions that</p> <p>24 have been raised, but there's no evidence been admitted</p> <p>25 on the ownership of mineral interests.</p>

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<p style="text-align: right;">1890</p> <p>1 MR. WALKER: Thank you, Your Honor.</p> <p>2 JUDGE WALSTON: I'll sustain the</p> <p>3 objection.</p> <p>4 Q (BY MR. WALKER) Ms. Flegal, based upon the</p> <p>5 information that you've seen in this hearing, based upon</p> <p>6 your duties as project manager, do you believe that you</p> <p>7 have any duty to inquire further or to make any kind of</p> <p>8 recommendation to the Executive Director concerning the</p> <p>9 representations that have been made on the application</p> <p>10 on Aligned Protestants' Exhibits 13 and 14, the</p> <p>11 representations that have been made, the assertions that</p> <p>12 have been made on that portion of the application?</p> <p>13 MR. RILEY: Objection. It's just another</p> <p>14 way to the same question.</p> <p>15 JUDGE WALSTON: I'll sustain the</p> <p>16 objection, Mr. Walker. The ownership of mineral</p> <p>17 interest is not an issue that's been remanded, and</p> <p>18 there's no motion or anything pending before the ALJs,</p> <p>19 so I'll sustain the objection. That's beyond the scope</p> <p>20 of this proceeding.</p> <p>21 MR. WALKER: Thank you, Your Honor.</p> <p>22 Q (BY MR. WALKER) Ms. Flegal, do you think that</p> <p>23 today the application is administratively complete?</p> <p>24 A Yes.</p> <p>25 Q If after today -- let me back up.</p>	<p style="text-align: right;">1892</p> <p>1 A Yes.</p> <p>2 Q Let me ask you, Ms. Flegal, on Line 14, the</p> <p>3 question is asked of you: "Has the Executive Director's</p> <p>4 preliminary decision changed that these proposed</p> <p>5 permits, if issued, meet all statutory and regulatory</p> <p>6 requirements?" Do you see that question?</p> <p>7 A Yes.</p> <p>8 Q Your answer is: "No," that the Executive</p> <p>9 Director's preliminary decision has not changed. Is</p> <p>10 that correct?</p> <p>11 A Correct.</p> <p>12 Q Do you believe today, Ms. Flegal, that the</p> <p>13 application meets all statutory and regulatory</p> <p>14 requirements?</p> <p>15 A Yes.</p> <p>16 Q In the face of the information that you have</p> <p>17 seen in this hearing and in the face of that</p> <p>18 representation that you see in applied -- excuse me --</p> <p>19 Aligned Protestants' Exhibits 13 and 14, do you believe</p> <p>20 the application meets all statutory and regulatory</p> <p>21 requirements?</p> <p>22 MR. RILEY: Objection.</p> <p>23 MS. GOSS: Asked and answered, objection.</p> <p>24 JUDGE WALSTON: I'll sustain the</p> <p>25 objections.</p>
<p style="text-align: right;">1891</p> <p>1 If you ever come into possession of</p> <p>2 information after the close of a hearing or, perhaps,</p> <p>3 during the course of a hearing, is it within your</p> <p>4 authority as project manager to conclude or to suggest</p> <p>5 to the Executive Director that, in fact, the application</p> <p>6 is not complete?</p> <p>7 JUDGE WALSTON: We need to -- are you</p> <p>8 talking about is the application administratively</p> <p>9 complete?</p> <p>10 MR. WALKER: Yes, Your Honor.</p> <p>11 JUDGE WALSTON: Okay. That's not an issue</p> <p>12 remanded, and we -- parts of the original PFD addressed</p> <p>13 that and I think there's even case law that once the</p> <p>14 application is declared administratively complete, it's</p> <p>15 no longer open to discussion at the hearing. We don't</p> <p>16 even receive evidence on that. So if you're addressing</p> <p>17 it to whether or not the application is administratively</p> <p>18 complete, I think that's not an issue that's here.</p> <p>19 MR. WALKER: Thank you, Your Honor. Let</p> <p>20 me --</p> <p>21 JUDGE WALSTON: In the technical term of</p> <p>22 "administratively complete," or the administrative term.</p> <p>23 Q (BY MR. WALKER) Ms. Flegal, let me direct your</p> <p>24 attention to Page 9 of 9 of your prefiled testimony. Do</p> <p>25 you have that in front of you?</p>	<p style="text-align: right;">1893</p> <p>1 Q (BY MR. WALKER) Ms. Flegal, what steps, if</p> <p>2 any, did your staff take in the application to verify</p> <p>3 the mineral rights ownership?</p> <p>4 MR. RILEY: Objection.</p> <p>5 JUDGE WALSTON: I'll sustain the</p> <p>6 objection. Mineral rights ownership is not an issue,</p> <p>7 Mr. Walker.</p> <p>8 MR. WALKER: Your Honor, I'll pass the</p> <p>9 witness.</p> <p>10 JUDGE WALSTON: Public Interest Counsel?</p> <p>11 MR. HUMPHREY: Thank you.</p> <p>12 CROSS-EXAMINATION</p> <p>13 BY MR. HUMPHREY:</p> <p>14 Q Is your testimony directed primarily to the</p> <p>15 modeling you conducted and the results of that modeling?</p> <p>16 A Yes.</p> <p>17 Q You're not testifying about the public interest</p> <p>18 component of this application, are you?</p> <p>19 A No.</p> <p>20 Q Is the -- are you the only witness for the</p> <p>21 Executive Director?</p> <p>22 A Yes.</p> <p>23 MR. HUMPHREY: Thank you. I'll pass the</p> <p>24 witness.</p> <p>25 JUDGE WALSTON: Any redirect?</p>

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<p style="text-align: right;">1894</p> <p>1 MS. GOSS: No redirect, Your Honors.</p> <p>2 JUDGE WALSTON: Okay. Thank you.</p> <p>3 MR. RILEY: Judge, well, maybe it's not</p> <p>4 appropriate, but at least I'll apply. I realize because</p> <p>5 of order of cross-examination, that we're kind of out of</p> <p>6 sequence. I have a few questions, if that's allowable.</p> <p>7 MR. WALKER: I object, Your Honor.</p> <p>8 There's no redirect.</p> <p>9 JUDGE WALSTON: There's no redirect, so I</p> <p>10 won't allow that.</p> <p>11 Thank you. You can be excused.</p> <p>12 And does that conclude the ED's case?</p> <p>13 MS. GOSS: Yes, Your Honors, the ED rests.</p> <p>14 JUDGE WALSTON: Is TexCom ready to proceed</p> <p>15 with rebuttal?</p> <p>16 MR. RILEY: Yes, sir, could we have a few</p> <p>17 minutes, though. I just want to get organized and --</p> <p>18 JUDGE WALSTON: That would be fine. And</p> <p>19 who are you calling first?</p> <p>20 MR. RILEY: First witness will be</p> <p>21 Dr. Bruce Langhus.</p> <p>22 JUDGE WALSTON: Okay.</p> <p>23 MR. RILEY: And potentially, the second</p> <p>24 witness would be Mr. Casey. At this time -- I don't</p> <p>25 want to preclude the possibility, but at this time, I</p>	<p style="text-align: right;">1896</p> <p>1 I don't anticipate us --</p> <p>2 MS. MENDOZA: Second.</p> <p>3 JUDGE WALSTON: And a lot of that would</p> <p>4 just depend on --</p> <p>5 MR. RILEY: Wait. I got a couple seconds</p> <p>6 here.</p> <p>7 JUDGE WALSTON: All right. We'll go off</p> <p>8 the record.</p> <p>9 (Recess: 10:37 a.m. to 10:52 a.m.)</p> <p>10 JUDGE WALSTON: Okay. We'll go back on</p> <p>11 the record.</p> <p>12 I think I asked you at the end, but does</p> <p>13 that conclude the Executive Director's case?</p> <p>14 MS. GOSS: Yes, Your Honor.</p> <p>15 JUDGE WALSTON: Okay.</p> <p>16 MS. GOSS: The ED rests.</p> <p>17 JUDGE WALSTON: Then, Mr. Riley, call your</p> <p>18 next rebuttal witness.</p> <p>19 MR. RILEY: Thank you, Judge. Given an</p> <p>20 indication of how tired I am, I almost said "The People</p> <p>21 call" because I started my career as a prosecutor.</p> <p>22 But TexCom calls Dr. Bruce Langhus.</p> <p>23 JUDGE WALSTON: Dr. Langhus, will you</p> <p>24 raise your right hand.</p> <p>25 (Witness sworn)</p>
<p style="text-align: right;">1895</p> <p>1 only anticipate calling Dr. Langhus.</p> <p>2 JUDGE WALSTON: Okay.</p> <p>3 MR. RILEY: Just so everyone knows.</p> <p>4 JUDGE WALSTON: And just so the parties</p> <p>5 know who's coming first.</p> <p>6 We'll take -- we'll start back at 10 till</p> <p>7 11:00. That will give all the parties time to get</p> <p>8 organized and ready.</p> <p>9 MS. MENDOZA: And, Your Honor, do we have</p> <p>10 anticipated, sort of, a lunch timing?</p> <p>11 JUDGE WALSTON: Not really.</p> <p>12 MS. MENDOZA: Okay. I was just wondering</p> <p>13 if we're going to do the 30-minute thing today?</p> <p>14 JUDGE WALSTON: A lot of it will depend on</p> <p>15 how the cross-examination goes.</p> <p>16 MS. MENDOZA: Okay. Thank you.</p> <p>17 JUDGE WALSTON: If you want to plan on a</p> <p>18 worst-case basis --</p> <p>19 MS. MENDOZA: We will.</p> <p>20 JUDGE WALSTON: -- plan on 30 minutes.</p> <p>21 (Laughter)</p> <p>22 MS. MENDOZA: We will plan on a worst-case</p> <p>23 basis.</p> <p>24 MR. RILEY: In fact, I'd hoped we could</p> <p>25 plan on maybe eating lunch after we finish because I</p>	<p style="text-align: right;">1897</p> <p>1 JUDGE WALSTON: And state your full name</p> <p>2 right into that microphone.</p> <p>3 WITNESS LANGHUS: My name is Bruce Gunner</p> <p>4 Langhus, spelled L-a-n-g-h-u-s.</p> <p>5 JUDGE WALSTON: Thank you.</p> <p>6 And you can proceed.</p> <p>7 MR. RILEY: Thank you. Mr. Lee is</p> <p>8 approaching the reporter, so let's take a moment here</p> <p>9 and just get an exhibit marked, which I believe will be</p> <p>10 TexCom 113, if I'm remembering correctly.</p> <p>11 (Exhibit Texcom No. 113 marked)</p> <p>12 MR. RILEY: And, Judges, if it's okay with</p> <p>13 you -- I'm sorry. You're all right -- while Mr. Lee is</p> <p>14 up, there's going to be another exhibit that TexCom will</p> <p>15 be offering, so let me get that marked as well and</p> <p>16 distribute it, if that's all right.</p> <p>17 JUDGE WALSTON: Okay.</p> <p>18 (Exhibit TexCom No. 114 marked)</p> <p>19 MR. RILEY: I think we're all set if the</p> <p>20 Judges are.</p> <p>21 JUDGE WALSTON: Yes.</p> <p>22 MR. RILEY: Thank you.</p> <p>23</p> <p>24</p> <p>25</p>

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<p style="text-align: right;">1898</p> <p>1 REBUTTAL PRESENTATION ON BEHALF OF</p> <p>2 TEXCOM GULF DISPOSAL, LLC</p> <p>3 BRUCE LANGHUS,</p> <p>4 having been first duly sworn, testified as follows:</p> <p>5 DIRECT EXAMINATION</p> <p>6 BY MR. RILEY:</p> <p>7 Q Dr. Langhus, you've testified in this case</p> <p>8 previously, and specifically, in December 2007. Is that</p> <p>9 right?</p> <p>10 A Correct.</p> <p>11 Q And you've been a geologist -- consulting</p> <p>12 geologist to TexCom since even prior to that. Is that</p> <p>13 correct?</p> <p>14 A Yes.</p> <p>15 Q Would you take a look at TexCom Exhibit 113.</p> <p>16 A (Witness complying.)</p> <p>17 Q It's a three-page -- I'll call it a CV, and</p> <p>18 it's updated for testimony in this case. Is that</p> <p>19 correct?</p> <p>20 A Yes.</p> <p>21 Q So your CV has been introduced previously in</p> <p>22 the December 2007 hearing. This is just an update?</p> <p>23 A Yes.</p> <p>24 Q Now, at the time December 2007 hearing, you</p> <p>25 were working for ALL Consulting. Is that correct?</p>	<p style="text-align: right;">1900</p> <p>1 A I used to be employed by Gulf Oil Corporation</p> <p>2 and was exploration manager in the offshore out of New</p> <p>3 Orleans where I worked as an exploration geologist in</p> <p>4 the federal offshore, the state offshore, as well as</p> <p>5 onshore areas of the Gulf of Mexico.</p> <p>6 Q And what time frame was that, sir?</p> <p>7 A Approximately, 1980 to 1985.</p> <p>8 Q And since 1985, have you worked either for a</p> <p>9 private company or otherwise for yourself as a</p> <p>10 consulting geologist on geologic matters in the Gulf</p> <p>11 Coast region?</p> <p>12 A Yes, as a consultant working for a number of</p> <p>13 different clients in Mexico -- I should say Texas,</p> <p>14 Louisiana, Mississippi, looking at essentially the</p> <p>15 onshore portion of the Gulf of Mexico in those areas,</p> <p>16 working both exploration and production.</p> <p>17 Q I mentioned that I observed you to be in the</p> <p>18 room for most of the testimony in this case. There was</p> <p>19 some testimony -- and tell me if you recall it -- about</p> <p>20 pressure gradient.</p> <p>21 A Correct.</p> <p>22 Q And could you just, very briefly, sir, tell us</p> <p>23 again what pressure gradient pertains to?</p> <p>24 A Pressure gradient is looking at reservoir</p> <p>25 pressure that's been corrected for depth, and so it's</p>
<p style="text-align: right;">1899</p> <p>1 A That is correct.</p> <p>2 Q Is that still the case, sir?</p> <p>3 A No. No, I left there about nine months ago.</p> <p>4 Q All right. With that change in your career</p> <p>5 path, are there any other highlights of the -- of TexCom</p> <p>6 Exhibit 113 that you'd like to bring to our attention?</p> <p>7 A No, I don't think so.</p> <p>8 Q All right.</p> <p>9 MR. RILEY: So let's offer TexCom</p> <p>10 Exhibit 113 into the record.</p> <p>11 JUDGE WALSTON: Any objection?</p> <p>12 (No response)</p> <p>13 JUDGE WALSTON: TexCom Exhibit 113 is</p> <p>14 admitted.</p> <p>15 (Exhibit TexCom No. 113 admitted)</p> <p>16 Q (BY MR. RILEY) Dr. Langhus, I think you've</p> <p>17 been here for most of the testimony. And I say that</p> <p>18 only to set up the next set of questions, which are</p> <p>19 going to be very directed toward some of your experience</p> <p>20 in the Gulf Coast region. And by Gulf Coast, I mean the</p> <p>21 Gulf of Mexico.</p> <p>22 A Certainly.</p> <p>23 Q Tell us your experience beginning with your</p> <p>24 earliest experience in working on matters that are</p> <p>25 geologic matters in the Gulf Coast.</p>	<p style="text-align: right;">1901</p> <p>1 essentially pressure change with depth. It's expressed</p> <p>2 in -- among other units as psi per foot.</p> <p>3 Q And if stratum below the earth are in</p> <p>4 communication and one were to measure psi and then</p> <p>5 correct for depth, the assumption I'm asking you to make</p> <p>6 is that stratum are in communication, would you expect</p> <p>7 pressure gradient number to be the same?</p> <p>8 A Yes.</p> <p>9 Q In your opinion, sir, is the pressure gradient</p> <p>10 of .397 and .406 the same?</p> <p>11 A No.</p> <p>12 Q Can you explain why?</p> <p>13 A Well, they're -- the cord's pressure transducer</p> <p>14 within these tools that measure downhole pressure are</p> <p>15 more accurate than that. And if they were in</p> <p>16 communication, the pressure gradient would be .406 in</p> <p>17 both of them.</p> <p>18 Q Mr. Herber -- were you here for Mr. Herber's --</p> <p>19 excuse me -- testimony?</p> <p>20 A For most of it, yes.</p> <p>21 Q All right. Do you recall Mr. Herber testifying</p> <p>22 about an average Gulf Coast pressure gradient of .45 psi</p> <p>23 per foot?</p> <p>24 A I did hear that, yes.</p> <p>25 Q Have you reviewed a document provided by</p>

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<p style="text-align: right;">1902</p> <p>1 Denbury in this case? I believe it was an article 2 authored by -- individual by the name of Hackley in 3 2008 -- 4 A Correct. 5 Q -- that -- I'm sorry. Let me get the document 6 number. 7 A Okay. 8 Q I believe it's Document 10176. Did you look at 9 that? 10 A Yes. 11 MR. RILEY: I'm sorry. The Denbury Bates 12 number for others is DEN 004442. 13 JUDGE WALSTON: Just so I'm clear, is this 14 a document in evidence or -- 15 MR. RILEY: No, sir. Just he referred to 16 it, so I just wanted to -- 17 JUDGE WALSTON: Okay. 18 MR. RILEY: -- ask him -- I'm going to ask 19 him some questions about it. I wanted everybody to have 20 a chance to orient. 21 JUDGE WALSTON: Okay. 22 Q (BY MR. RILEY) In that article, is there a 23 description or were there measurements of virgin 24 pressures existing in Gulf Coast reservoirs? 25 A There were no -- I don't believe there were any</p>	<p style="text-align: right;">1904</p> <p>1 company, the name of Crossroads -- 2 A Yes. 3 Q -- of pressure in the wellbore we've been 4 discussing in this case, WDW410, or at that time, 315. 5 Is that right? 6 A Correct. 7 Q And what pressure -- well, let's find -- hang 8 on. Just give everybody a reference, hopefully. It's 9 TexCom Exhibit 11, Page 125, I believe. And do you have 10 that before you, sir? 11 A I do. 12 Q Is there a pressure reading that was taken 13 either by Crossroads or on behalf of Crossroads for 14 WDW410? 15 A Yes. This -- on this page, it says that the 16 pressure was taken at 6200 feet below the KB, and the 17 pressure obtained was 2518.52. 18 Q 2518? 19 A .52. 20 Q .52. That's some of that precision you were 21 mentioning a moment ago, for the instruments? 22 A Yes. 23 Q So based on those two numbers, the depth and 24 the pressure measurement, can you calculate the pressure 25 gradient based on Crossroad's information?</p>
<p style="text-align: right;">1903</p> <p>1 measurements, but there was a -- there was a pool of 2 literature within the Gulf Coast, and it did include a 3 separate graph listing the pressures versus depth for 4 upper Claiborne, which is the same as Cockfield, within 5 the Gulf Coast. 6 Q And did the article list a specific -- a 7 specific value for -- let's pick a depth. 6,000 feet. 8 Is that workable? 9 A Okay. So for 6,000 feet, which is 10 approximately the depth of the top of our injection 11 zone, it was -- or I'm sorry -- injection interval, the 12 pressures ranged from 2,000 psi to approximately 4,000 13 psi which works out as a range of pressure gradients, 14 correcting for depth again, of approximately .33 to 15 approximately .67. 16 Q And as I understand Mr. Herber's testimony on 17 this point, he was saying that one should expect the 18 injection interval in the TexCom application at virgin 19 pressure to be .45 psi per foot. 20 A That could be the average, but I can guarantee 21 you that 50 percent of the reservoirs are going to be at 22 pressure gradients below that. 23 Q All right. So is it correct, then, to compare 24 the -- let's go a different direction for just a moment. 25 There was a reading taken by a prior</p>	<p style="text-align: right;">1905</p> <p>1 A Yes. 2 Q Would you mind taking a moment and doing that? 3 A (Witness complying.) 4 Q And tell us what you're doing, if you don't 5 mind. 6 A Okay. I'm putting in 25 -- I'm sorry. I 7 misdid it. 8 2518.52 and then dividing that by 6200, 9 and that gives me .40621. 10 Q And what would the units be associated with 11 that number? 12 A Psi per foot. 13 Q Sometime more recently, another set of data was 14 developed regarding pressure measurement in the borehole 15 WDW410. Is that right? 16 A That's correct. 17 Q And -- I'm sorry, go ahead. 18 A Associated with the fall-off test that was done 19 in 2009. 20 Q Okay. Do you have those numbers? By those 21 numbers, I mean similar numbers to the ones you just 22 told us about and made the calculation from based on the 23 measurements in 2009? 24 A Yes. This is in TexCom Exhibit 91, Page 23. 25 And it lists there near the bottom of the page pressure</p>

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1906	1908
<p>1 at beginning of well injection is 2437.2 psi measured at 2 6,000 feet.</p> <p>3 Q Okay. Can you do a similar calculation, then, 4 and give us the gradient as measured in 2009?</p> <p>5 JUDGE EGAN: What was the number you're 6 using? I'm sorry.</p> <p>7 WITNESS LANGHUS: It's 2437.2 psi divided 8 by 6,000 equals .4062.</p> <p>9 Q (BY MR. RILEY) It appears as though the 10 pressure measured in 1999 -- pressure gradient. I'm 11 sorry.</p> <p>12 A Yes.</p> <p>13 Q Well, let me say it again.</p> <p>14 The pressure measured in 1999 when 15 adjusted for depth in creating a gradient and the same 16 measurement -- or a measurement made in 2009 adjusted 17 for depth, seems like the numbers are effectively the 18 same. Is that right?</p> <p>19 A Certainly. To three digits, anyway.</p> <p>20 Q Now, based on your knowledge of the 21 conditions -- or I'm sorry -- the circumstances of this 22 application, do you know of any production from the 23 Cockfield Formation that's occurred from 1999 to 2009?</p> <p>24 A Certainly. There's been production in the 25 upper portion of the Cockfield, what we call -- what has</p>	<p>1 A Yes.</p> <p>2 Q And that's above the Jackson shale?</p> <p>3 A It's above the confining zone, above the 4 Jackson.</p> <p>5 Q So the best of your knowledge, then, the 6 operators of the Conroe field have not been replacing 7 fluid during the time we've been talking about, 1999 to 8 2009?</p> <p>9 A I don't believe so.</p> <p>10 Q In the prior proceeding, you testified that the 11 fault, the 4400-foot fault, was transmissive. Is 12 that --</p> <p>13 A I did testify to that, yes.</p> <p>14 Q And do you still believe that?</p> <p>15 A I do.</p> <p>16 Q And the context of the -- well, let's go back 17 just one more step to this notion of pressure sinks 18 created by production of fluid out of a reservoir such 19 as the Conroe field. Can you follow that?</p> <p>20 A Yes.</p> <p>21 Q Okay. What is a pressure sink?</p> <p>22 A Pressure sink is a reservoir or portion of a 23 reservoir that is at lower pressure gradient than the 24 surrounding reservoir or reservoirs.</p> <p>25 Q The fluid production we've been talking about</p>
1907	1909
<p>1 been called the upper Cockfield unit. That's subject to 2 both -- or it's subject to production of both oil and 3 gas and water by the successors to Exxon.</p> <p>4 Q Okay. And that would be Wapiti? Is that your 5 understanding?</p> <p>6 A Yes.</p> <p>7 Q And then, more recently Denbury. Is that 8 right?</p> <p>9 A Yes.</p> <p>10 Q And to the best of your knowledge, were 11 substantial amounts of fluid removed from the Conroe 12 field?</p> <p>13 A Yes, sir.</p> <p>14 Q And have you been here during testimony about 15 how operators of the Conroe field dispose of their 16 fluid?</p> <p>17 A I don't know if -- I heard from Wapiti two 18 years ago, but I haven't heard from Denbury if they're 19 doing the same things.</p> <p>20 Q Would you assume with me, then, that the fluids 21 or the good stuff or the oil is utilized or made into 22 useful products; but the other fluids, the water or 23 brine, it's been called sometimes, is it your 24 understanding that that's injected into a stratum in the 25 Conroe field other than the Cockfield?</p>	<p>1 from the operator of the field, from 1999 to 2009, would 2 you expect that to have caused a reduction in pressure 3 in stratum other than the lower Cockfield?</p> <p>4 A Yes.</p> <p>5 MS. MENDOZA: I'm going to object, Your 6 Honor. I'm not sure that he was designated as a 7 reservoir engineer or somebody that could testify about 8 that. I believe he was going to offer geology rebuttal 9 testimony.</p> <p>10 MR. RILEY: That's correct.</p> <p>11 MS. MENDOZA: And I don't think that this 12 is --</p> <p>13 MR. RILEY: And this is --</p> <p>14 MS. MENDOZA: I think this is moving into 15 how the reservoir works as opposed to the geology of the 16 reservoir.</p> <p>17 MR. RILEY: I'll need to pull out 18 Mr. Herber's testimony. Mr. Herber was also a geologist 19 and, I believe, gave extensive testimony on these 20 subjects.</p> <p>21 JUDGE WALSTON: Overrule the objection.</p> <p>22 MR. RILEY: Could I have the last question 23 read back? I'm sorry. I've lost track.</p> <p>24 (The record was read as requested)</p> <p>25 Q (BY MR. RILEY) And what I'm getting at and I</p>

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<p style="text-align: right;">1910</p> <p>1 may go more directly to it, would pressure sinks around</p> <p>2 producing wellbores have existed during production from</p> <p>3 1999 to 2009?</p> <p>4 A Certainly.</p> <p>5 Q If the -- I'm going to use a phrase, and I'm</p> <p>6 not trying to be flippant about it.</p> <p>7 But there's been testimony about the</p> <p>8 Cockfield Formation, the entirety of the Cockfield</p> <p>9 Formation, breathing as one.</p> <p>10 A I've heard that.</p> <p>11 Q If the Cockfield Formation were breathing as</p> <p>12 one from 1999 to 2009, would you expect the pressure</p> <p>13 readings that you just calculated -- the pressure</p> <p>14 gradients you just calculated to be the same?</p> <p>15 A If the entire Cockfield unit was -- yes, was</p> <p>16 breathing as one or was totally in communication, yes,</p> <p>17 then I would expect the pressure gradient to decrease.</p> <p>18 Q All right. And it didn't. Is that correct?</p> <p>19 A That is correct.</p> <p>20 Q Can we, then, safely conclude that it is the</p> <p>21 Cockfield Formation, the entirety of the Cockfield</p> <p>22 Formation, is not breathing as one?</p> <p>23 A Yes.</p> <p>24 Q And I'm talking in human years or human time,</p> <p>25 as we've called it at various times in this proceeding.</p>	<p style="text-align: right;">1912</p> <p>1 Do you have an opinion as to -- based on</p> <p>2 the information in this case, an opinion as to what the</p> <p>3 virgin pressure is in the Cockfield Formation -- I'm</p> <p>4 sorry -- in the area of WDW410 in the lower Cockfield</p> <p>5 Formation?</p> <p>6 A To the best of the information available, it is</p> <p>7 .406. That's the gradient.</p> <p>8 Q And that would fit in with the article that you</p> <p>9 reviewed and you described earlier, within the range of</p> <p>10 virgin pressures described in that article?</p> <p>11 A It certainly would.</p> <p>12 MR. RILEY: May I have just a moment?</p> <p>13 (Pause)</p> <p>14 Q (BY MR. RILEY) In your work, how long have you</p> <p>15 been practicing in the field of geology, sir?</p> <p>16 A Well, I started in 1966, so whatever that is.</p> <p>17 Q Whatever that is?</p> <p>18 A Yeah.</p> <p>19 (Laughter)</p> <p>20 Q (BY MR. RILEY) I get 44 years.</p> <p>21 A Approximately, yes.</p> <p>22 Q In the course of that 44 years, have you ever</p> <p>23 had opportunity to review something called a well log?</p> <p>24 A I certainly have.</p> <p>25 Q All right. And not to make this silly, but</p>
<p style="text-align: right;">1911</p> <p>1 Could you distinguish, I guess in a commonsense way,</p> <p>2 human time versus geologic time?</p> <p>3 A Human time, I would think, would be, oh, in the</p> <p>4 last hundred years, let's say. That kind of time frame.</p> <p>5 Whereas geologic time is, of course, millions of years</p> <p>6 or maybe even billions of years, but certainly millions.</p> <p>7 Q So when we use the phrase or the words</p> <p>8 "geologic time," we're not talking about, really,</p> <p>9 something that -- a generational difference in</p> <p>10 human years?</p> <p>11 A Correct.</p> <p>12 Q Back to this notion of virgin pressure -- maybe</p> <p>13 I haven't introduced that notion.</p> <p>14 But what is a virgin pressure, if I</p> <p>15 haven't asked you that previously?</p> <p>16 A For a reservoir, it would mean the pressure or</p> <p>17 the pressure gradient within the reservoir prior to</p> <p>18 production or injection into that reservoir.</p> <p>19 Q To the best of your knowledge, sir, is -- has</p> <p>20 there ever been production of fluid from the lower</p> <p>21 Cockfield in the area of the WDW410?</p> <p>22 A To the best of my knowledge, there has not.</p> <p>23 Q Geologically speaking, is it possible that</p> <p>24 there -- well, withdraw it. Let me go back to the</p> <p>25 notion of virgin pressure.</p>	<p style="text-align: right;">1913</p> <p>1 have you review -- is it safe to say, you've reviewed</p> <p>2 many well logs in 44 years of practicing in the science</p> <p>3 and geology?</p> <p>4 A Yes.</p> <p>5 Q And do you feel as though you're competent to</p> <p>6 review and interpret well logs?</p> <p>7 A Yes.</p> <p>8 Q At least as it pertains to geologic stratum.</p> <p>9 Is that right?</p> <p>10 A Correct. Correct.</p> <p>11 Q Let's take a look at what's been marked and</p> <p>12 presented to you as TexCom Exhibit 114.</p> <p>13 MS. MENDOZA: Your Honor, at this point,</p> <p>14 I'm going to object to any testimony that is reflected</p> <p>15 in this. We have not been produced all of the</p> <p>16 information that this witness has relied upon.</p> <p>17 Specifically, TexCom Exhibit 114 is</p> <p>18 different than the exhibit that was produced to us</p> <p>19 earlier, and also, I've not been produced any electronic</p> <p>20 version of this. I've been produced no working notes</p> <p>21 off of this. I'm entitled to those. And since I</p> <p>22 haven't received them, I ask that the witness not be</p> <p>23 allowed to testify about this.</p> <p>24 MR. RILEY: Well, let me respond because</p> <p>25 each of the well logs I'm about to go through, most of</p>

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<p style="text-align: right;">1914</p> <p>1 them are already exhibits in the case. So we could do</p> <p>2 this the long way, which is to have the witness pull out</p> <p>3 each exhibit.</p> <p>4 Let me go through the list. First one is</p> <p>5 TexCom Exhibit --</p> <p>6 JUDGE WALSTON: Okay.</p> <p>7 MR. RILEY: I'm sorry.</p> <p>8 JUDGE WALSTON: Hang on.</p> <p>9 MR. RILEY: And in terms of what's been</p> <p>10 changed, there was a one-inch log that's already in</p> <p>11 evidence, but Denbury had produced a 5-inch log. And so</p> <p>12 he reviewed both the one-inch log and the 5-inch log,</p> <p>13 and we made that clear. That's the only change.</p> <p>14 JUDGE WALSTON: Are you objecting to just</p> <p>15 this document in particular?</p> <p>16 MS. MENDOZA: Well, I'm objecting to it,</p> <p>17 and I'm also objecting to any testimony about it. I</p> <p>18 haven't been -- I have not been produced any of his</p> <p>19 notes, his -- the electronic file that accompanies this.</p> <p>20 We had a big dispute yesterday over an electronic file.</p> <p>21 I should have the electronic file for this.</p> <p>22 MR. RILEY: We did produce the notes. We</p> <p>23 did produce -- the documents are in evidence. That's</p> <p>24 what he looked at. I don't know what counsel's</p> <p>25 complaint is other than she'd rather not have this</p>	<p style="text-align: right;">1916</p> <p>1 MR. RILEY: I didn't complain about</p> <p>2 metadata. I've never used that word in this proceeding.</p> <p>3 JUDGE WALSTON: Okay. I'll overrule your</p> <p>4 objection at least to the extent of all of them except</p> <p>5 this Wapiti one, and that may just need some</p> <p>6 explanation. I don't know. The others appear to be</p> <p>7 exhibits that are already in the record, and as I</p> <p>8 understand it, this is a just a summary document of</p> <p>9 those exhibits.</p> <p>10 MR. RILEY: That's correct, Judge.</p> <p>11 JUDGE WALSTON: So you haven't offered it</p> <p>12 for admission yet, but you were going to ask him some</p> <p>13 questions on it?</p> <p>14 MR. RILEY: Yes, sir.</p> <p>15 Q (BY MR. RILEY) All right. Dr. Langhus, would</p> <p>16 you take a look at what's been identified as TexCom</p> <p>17 Exhibit 114?</p> <p>18 A Yes.</p> <p>19 Q And did you participate in the preparation of</p> <p>20 this exhibit?</p> <p>21 A I prepared it.</p> <p>22 Q Okay. And could you describe what it is that</p> <p>23 you did and how you prepared TexCom Exhibit 114?</p> <p>24 A What I did was to quickly look at the wells</p> <p>25 that were available to me at this hearing, which is the</p>
<p style="text-align: right;">1915</p> <p>1 testimony in the record.</p> <p>2 MS. MENDOZA: I'm sorry. I'm --</p> <p>3 MR. RILEY: There's notes produced.</p> <p>4 MS. MENDOZA: There were notes produced to</p> <p>5 this?</p> <p>6 MR. RILEY: I don't know what you mean</p> <p>7 electronic.</p> <p>8 JUDGE WALSTON: Hang on, Mr. Riley.</p> <p>9 MS. MENDOZA: I'm sorry. I guess my</p> <p>10 question is, so there was -- I'm looking for the</p> <p>11 electronic file that generated TexCom Exhibit 114.</p> <p>12 MR. RILEY: The Word document?</p> <p>13 MS. MENDOZA: We had a long discussion</p> <p>14 yesterday about the electronic file, the actual --</p> <p>15 JUDGE WALSTON: It appears to me</p> <p>16 Exhibit 114 is just a summary document of -- and that,</p> <p>17 at least, all of these except one appear to be already</p> <p>18 exhibits in the record. So I'm --</p> <p>19 MS. MENDOZA: Your Honor, I think we had</p> <p>20 this same set of objections about Mr. Herber. We gave</p> <p>21 them the results. It was there. It's been produced to</p> <p>22 them. And they're complaining about some sort of</p> <p>23 metadata file, and that was their entire objection to</p> <p>24 Mr. Herber's testimony. And we're asking for the same</p> <p>25 information here that counsel's so complained about.</p>	<p style="text-align: right;">1917</p> <p>1 wells that are already -- that have already been</p> <p>2 submitted in one form or another for the hearing, and to</p> <p>3 look at the -- at these logs to see if the -- what we've</p> <p>4 been calling the separating shale between the lower and</p> <p>5 the middle Cockfield units, if that shale was indeed</p> <p>6 present in these -- in these logs, which are the only</p> <p>7 logs that have been placed into exhibit that had</p> <p>8 penetrations into the lower Cockfield.</p> <p>9 Q Now, let's go to the notation of Wapiti</p> <p>10 No. 2315D. You see that row?</p> <p>11 A Yes.</p> <p>12 Q If you'll go over to the column identified at</p> <p>13 the top as "Source," it says, "DEN 002276, 5-inch log;</p> <p>14 also captured in 1-inch log on TexCom Exhibit 102."</p> <p>15 Could you explain that notation?</p> <p>16 A Like several of the logs, but certainly this</p> <p>17 one, there are two versions of this log that have been</p> <p>18 supplied.</p> <p>19 TexCom supplied the one-inch log, which is</p> <p>20 the smaller -- some people call them a correlation log,</p> <p>21 one inch to a hundred feet. That was submitted by</p> <p>22 TexCom in Exhibit 102.</p> <p>23 And then there's another version that I</p> <p>24 would call a computed log that was submitted by Denbury</p> <p>25 as their Document 002276.</p>

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1918	<p>1 MR. RILEY: And may I approach the</p> <p>2 witness?</p> <p>3 JUDGE WALSTON: Yes.</p> <p>4 MR. RILEY: And while I'm away, I'd like</p> <p>5 to mark another exhibit as TexCom Exhibit 115.</p> <p>6 MS. MENDOZA: Your Honor, can we take a</p> <p>7 look at this?</p> <p>8 MR. RILEY: Sure. It's Denbury Exhibit</p> <p>9 document -- find the Bates stamp -- let you look at it.</p> <p>10 (Exhibit TexCom No. 115 marked)</p> <p>11 Q (BY MR. RILEY) Dr. Langhus, do you now have in</p> <p>12 your hand Tex -- excuse me -- yeah, TexCom Exhibit 115</p> <p>13 marked for identification?</p> <p>14 A Yes.</p> <p>15 Q Is that the 5-inch log that you just referred</p> <p>16 to and identified as DEN 002276?</p> <p>17 A Yes. This is the log on the Wapiti 2315D.</p> <p>18 MR. RILEY: All right. At this time,</p> <p>19 Applicant offers TexCom Exhibit 114 and 115.</p> <p>20 JUDGE WALSTON: Any objections?</p> <p>21 MS. MENDOZA: Your Honor, I continue to</p> <p>22 renew my objection to TexCom Exhibit 114.</p> <p>23 JUDGE WALSTON: Okay. But no objection to</p> <p>24 115?</p> <p>25 MS. MENDOZA: No objection to 115.</p>	1920	<p>1 Q (BY MR. RILEY) All right. Dr. Langhus, would</p> <p>2 you take a look at, now, what's admitted as TexCom</p> <p>3 Exhibit 114. That's the --</p> <p>4 A One --</p> <p>5 Q -- table for it.</p> <p>6 A Oh, yes.</p> <p>7 Q That's the table.</p> <p>8 A Yes.</p> <p>9 Q Okay. Would you tell the ALJs what you did in</p> <p>10 preparing TexCom Exhibit 114?</p> <p>11 A I pulled these logs that had been produced</p> <p>12 before within this hearing, looked at the contact</p> <p>13 between the top of the lower Cockfield and the base of</p> <p>14 the middle Cockfield, and looked at the intervening</p> <p>15 shale and measured its thickness on the log. And this</p> <p>16 is what I've noted in the -- in this exhibit.</p> <p>17 Q Okay. So if I'm following along, then, you've</p> <p>18 got an identifier for the well on the first column;</p> <p>19 you've asked yourself the question, "Is there shale</p> <p>20 present between the middle and lower Cockfield</p> <p>21 Formations?" and you've answered that for each of the</p> <p>22 well logs you looked at --</p> <p>23 A Yes.</p> <p>24 Q -- explained the sources of your data in terms</p> <p>25 of --</p>
1919	<p>1 JUDGE WALSTON: Okay. Any others?</p> <p>2 (No response)</p> <p>3 JUDGE WALSTON: The objection is</p> <p>4 overruled, and TexCom Exhibits 114 and 115 are admitted.</p> <p>5 (Exhibits TexCom Nos. 114 and 115</p> <p>6 admitted)</p> <p>7 Q (BY MR. RILEY) And now, on TexCom Exhibit 114,</p> <p>8 where it says DEN 002276, would you just, in</p> <p>9 parentheses, put exhibit -- or TexCom Exhibit 115 now?</p> <p>10 JUDGE WALSTON: Mr. Riley, just so I'm</p> <p>11 clear, as I understand, that's an exhibit -- or a</p> <p>12 document produced by Denbury, but it's not previously</p> <p>13 been included?</p> <p>14 MR. RILEY: That's correct. That's why I</p> <p>15 wanted to have the reference in this so that everyone</p> <p>16 could follow along.</p> <p>17 JUDGE WALSTON: Okay.</p> <p>18 MR. RILEY: That is --</p> <p>19 JUDGE WALSTON: At some point -- not right</p> <p>20 now -- you can get the ALJs a copy?</p> <p>21 MR. RILEY: Yes.</p> <p>22 JUDGE WALSTON: Okay.</p> <p>23 MR. RILEY: I mean, it's a long log, but,</p> <p>24 yes, I certainly can. Let me ask Ms. Winningham to</p> <p>25 remind me of that.</p>	1921	<p>1 A Yes.</p> <p>2 Q -- record evidence, and then you have a -- I'm</p> <p>3 sorry -- fourth column indicating thickness of shale.</p> <p>4 Is that your opinion as to what the well logs reveal?</p> <p>5 A Correct. And I should point out that this is</p> <p>6 gross thickness of the shale.</p> <p>7 Q And explain that, sir.</p> <p>8 A Sometimes there are some -- for some of these</p> <p>9 wells, there are some intervening sands, and I did not</p> <p>10 split those out. I just noted the gross thickness of</p> <p>11 the unit.</p> <p>12 Q Okay. In general terms, then, sir, do you have</p> <p>13 an opinion as to whether the shale in the area -- the</p> <p>14 shale between the lower and middle Cockfield, whether it</p> <p>15 is persistent in the area around the TexCom well?</p> <p>16 A In the AOR, in the area of review, it certainly</p> <p>17 seems to be fairly general in its distribution. Like I</p> <p>18 say, there have been six penetrations, and six of them</p> <p>19 show the shale.</p> <p>20 Q You've explained that you did -- you put gross</p> <p>21 thickness into your table but that you may have observed</p> <p>22 or you could observe sands in that thickness. Is that</p> <p>23 right?</p> <p>24 A Some of them.</p> <p>25 Q The -- let's talk about specifically as it</p>

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<p style="text-align: right;">1922</p> <p>1 pertains to WDW315 that's identified in the exhibit.</p> <p>2 That's also what we've been calling WDW410. Is that</p> <p>3 right?</p> <p>4 A Correct.</p> <p>5 Q And could you tell us what you observed as it</p> <p>6 pertains to the thickness of the shale and any</p> <p>7 intervening sands within that shale based on your review</p> <p>8 of the well log?</p> <p>9 A Based on my -- that, I was able to examine in</p> <p>10 some detail because I did have the 5-inch log available</p> <p>11 on that well. And it showed remarkable consistency</p> <p>12 within its 38 feet of section.</p> <p>13 There is another shale that's quite a thin</p> <p>14 shale that's separated at the top, from the top of this</p> <p>15 intervening shale, but I didn't include that in the</p> <p>16 tabulation because it's separated by a sand of almost</p> <p>17 the same thickness.</p> <p>18 Q All right.</p> <p>19 A So it's -- I would look on that as a separate</p> <p>20 shale. Looking at the 38 feet that are included in a</p> <p>21 gross sense, I would say that all of that is shale.</p> <p>22 Q And that separate shale -- if I'm understanding</p> <p>23 your testimony, the separate shale is above the 38-foot</p> <p>24 shale?</p> <p>25 A Correct.</p>	<p style="text-align: right;">1924</p> <p>1 A (Witness complying.)</p> <p>2 Q All right. In Section 4, at the -- I think</p> <p>3 it's the last line, it says the -- tell me if I read it</p> <p>4 correctly -- the --</p> <p>5 MR. RILEY: I'm sorry, Judge. Do you</p> <p>6 need --</p> <p>7 JUDGE WALSTON: We had mislaid ours.</p> <p>8 MR. RILEY: Okay.</p> <p>9 JUDGE WALSTON: We found them now.</p> <p>10 MR. RILEY: Just wondering. I'll give you</p> <p>11 a moment. Let me take a moment. Excuse me.</p> <p>12 JUDGE WALSTON: So which page are you on?</p> <p>13 MR. RILEY: Page 2 of the WDW383.</p> <p>14 Q (BY MR. RILEY) The last sentence, Dr. Langhus,</p> <p>15 "The authorized injection interval is within the Yegua</p> <p>16 (lower Cockfield) Formation at the approximate</p> <p>17 subsurface depths of 6106 to 6589." Do you see that?</p> <p>18 A Correct. Yes.</p> <p>19 Q Okay. And it uses a term that we've been using</p> <p>20 and -- of Yegua. What is the Yegua Formation?</p> <p>21 A Yegua is just a term for the larger formation</p> <p>22 unit below the Jackson shale, and it would include the</p> <p>23 lower Cockfield. It would include all of the Cockfield.</p> <p>24 Q All right. And the -- when it says, so the</p> <p>25 Yegua is synonymous with Cockfield. Is that --</p>
<p style="text-align: right;">1923</p> <p>1 Q And not included in your gross measurement --</p> <p>2 A Correct.</p> <p>3 Q -- of 38 feet?</p> <p>4 All right. Would you take a moment and</p> <p>5 look at the Huntsman permits up there? I believe those</p> <p>6 are -- well, I don't know the number.</p> <p>7 MR. LEE: 106.</p> <p>8 MR. RILEY: 106?</p> <p>9 Q (BY MR. RILEY) TexCom Exhibit 106.</p> <p>10 MR. RILEY: May I help the witness find</p> <p>11 them?</p> <p>12 JUDGE WALSTON: Yes.</p> <p>13 A Yes, there is a sea of paper. All right. I</p> <p>14 have it.</p> <p>15 Q (BY MR. RILEY) Am I correct, sir, that you</p> <p>16 didn't do any consulting work for Huntsman in</p> <p>17 preparation of the application for this permit?</p> <p>18 A I have not consulted for them nor have I ever</p> <p>19 seen this piece of -- these pieces of paper.</p> <p>20 Q And that's one of the things they tell you not</p> <p>21 to do in law school when you have a witness on the</p> <p>22 stand, but let's go ahead anyhow.</p> <p>23 A Right.</p> <p>24 (Laughter)</p> <p>25 Q (BY MR. RILEY) Would you turn to Page No. 2.</p>	<p style="text-align: right;">1925</p> <p>1 A Yes.</p> <p>2 Q And the --</p> <p>3 A Approximately.</p> <p>4 Q I'm sorry?</p> <p>5 A Approximately.</p> <p>6 Q Okay. And the -- at least in this document, it</p> <p>7 seems to identify a portion of the Yegua called the</p> <p>8 lower Cockfield and correlates that to a certain depth.</p> <p>9 Is that the way you would read that?</p> <p>10 A That's the way I read it.</p> <p>11 Q If you flip a few more pages, you'll come to a</p> <p>12 similar document, but it refers to WDW384.</p> <p>13 A Yes.</p> <p>14 Q And about the same place on this document, it</p> <p>15 refers to the Yegua again, and in parentheses, the</p> <p>16 middle Cockfield. Is that right?</p> <p>17 A Yes.</p> <p>18 Q And gives subsurface depths of 5713 to</p> <p>19 6,084 feet.</p> <p>20 A Yes, I see that.</p> <p>21 Q All right. I couldn't help but notice that the</p> <p>22 difference -- well, let's start with the middle. Seems</p> <p>23 to go down to 66,084 feet. Is that the bottom, as you</p> <p>24 read it, of the --</p> <p>25 A Yes.</p>

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1926	<p>1 Q All right. And then if we go back to the first</p> <p>2 document, there's some 22 feet before, at least, these</p> <p>3 documents describe the top of the lower Cockfield.</p> <p>4 A Correct. Correct. There seems to be a 22-foot</p> <p>5 gap there, yes.</p> <p>6 Q Might that correlate to shale?</p> <p>7 A It would certainly fall within that depth</p> <p>8 interval or that correlative interval, I guess I would</p> <p>9 say. I -- since they haven't drilled a well, there's no</p> <p>10 log here.</p> <p>11 Q Right.</p> <p>12 MR. RILEY: May I just have a minute?</p> <p>13 (Pause)</p> <p>14 MR. RILEY: Thank you, Dr. Langhus.</p> <p>15 I pass the witness.</p> <p>16 JUDGE WALSTON: Lone Star?</p> <p>17 MR. HILL: I pass the witness, Your Honor.</p> <p>18 No questions.</p> <p>19 JUDGE WALSTON: Denbury?</p> <p>20 MS. MENDOZA: Yes, Your Honor.</p> <p>21 CROSS-EXAMINATION</p> <p>22 BY MS. MENDOZA:</p> <p>23 Q Dr. Langhus, I just want to make sure I</p> <p>24 understand what you did.</p> <p>25 Now, if I understood you correctly, I</p>	1928	<p>1 right?</p> <p>2 A It should. It should, yes.</p> <p>3 Q Okay. Why don't we take a look at the exhibit,</p> <p>4 and let's find this exact 46-foot of shale that you're</p> <p>5 talking about. Is that -- isn't this the -- this is the</p> <p>6 Wapiti one, the DEN 002276? Does it show --</p> <p>7 MR. RILEY: I don't have a copy in front</p> <p>8 of me. May I have a minute?</p> <p>9 JUDGE WALSTON: That's the exhibit we just</p> <p>10 entered.</p> <p>11 MR. RILEY: Yeah, but that's the only one</p> <p>12 I have. May I approach the witness, at least look over</p> <p>13 his shoulder?</p> <p>14 JUDGE WALSTON: You can look over his</p> <p>15 shoulder.</p> <p>16 MS. MENDOZA: Your Honor, I'm going to</p> <p>17 have to do the same to make sure I'm looking at the same</p> <p>18 document.</p> <p>19 JUDGE WALSTON: That's fine.</p> <p>20 MR. RILEY: I -- do you have a preference?</p> <p>21 Right or left?</p> <p>22 (Laughter)</p> <p>23 MS. MENDOZA: Whichever one. Your choice,</p> <p>24 John.</p> <p>25 A This log, in particular, was marked up -- well,</p>
1927	<p>1 believe you testified that you quickly looked at the</p> <p>2 well logs. Is that correct?</p> <p>3 A That is correct.</p> <p>4 Q So this wouldn't be some in-depth analysis of</p> <p>5 the well logs?</p> <p>6 A Oh, no. It -- all I was looking for was that</p> <p>7 one small shale.</p> <p>8 Q Okay. And so you went in; you pulled them out;</p> <p>9 you took a look; you said, "This is how deep it is." Is</p> <p>10 that what you did?</p> <p>11 A And how thick it is.</p> <p>12 Q How thick it is. So that's all you did?</p> <p>13 A Correct.</p> <p>14 Q You didn't correlate these logs?</p> <p>15 A Oh, yeah. You have to correlate the logs in</p> <p>16 order to find which shale it is that you're talking</p> <p>17 about.</p> <p>18 Q So you marked them up so that you could</p> <p>19 correlate the logs. Right?</p> <p>20 A These were already marked.</p> <p>21 Q It was already marked? So --</p> <p>22 A Yes.</p> <p>23 Q -- if I looked at this exhibit, it already</p> <p>24 shows me this exact 38-foot of -- I'm sorry. This would</p> <p>25 be the Wapiti -- the exact 46-foot of shale. Is that</p>	1929	<p>1 it's our -- is this the one that we're looking at? Yes.</p> <p>2 Yes. This one was on a cross section</p> <p>3 produced by Denbury that we entered into exhibit as</p> <p>4 Exhibit 102, and it had correlation marks on the -- on</p> <p>5 that cross section. This is the shale that was picked</p> <p>6 as the separating shale.</p> <p>7 And looking at the other logs in the cross</p> <p>8 section, I agree with the correlation. So the shale in</p> <p>9 question on the Wapiti log appears from about 47 -- 5700</p> <p>10 to approximately 57-something.</p> <p>11 Q (BY MS. MENDOZA) So just to be clear, then,</p> <p>12 this Wapiti well log that was just entered isn't</p> <p>13 actually the one that you used to make your correlation?</p> <p>14 You used something that Denbury had done, is that</p> <p>15 correct, to make your correlation?</p> <p>16 MR. RILEY: Objection. That's not the</p> <p>17 testimony. This is --</p> <p>18 MS. MENDOZA: Well, I'm asking him if that</p> <p>19 is his testimony.</p> <p>20 MR. RILEY: Well, and I'm making an</p> <p>21 objection, Counsel. This is the well log -- the only</p> <p>22 one we have that we got from Denbury.</p> <p>23 JUDGE WALSTON: Okay. I'm not sure what</p> <p>24 the question was.</p> <p>25 MS. MENDOZA: Well, my question is, he</p>

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<p style="text-align: right;">1930</p> <p>1 told me that it was marked on the one from which he made</p> <p>2 an -- his correlation. I have been unable to identify</p> <p>3 any markings, but if the witness has some, I'd like to</p> <p>4 see them. And now he is saying that, no, he actually</p> <p>5 used Exhibit 102 to make his correlation.</p> <p>6 Q (BY MS. MENDOZA) I want to clarify that you</p> <p>7 actually used the work of Denbury to make your</p> <p>8 correlation, not your own work off of DEN 002276, which</p> <p>9 is now TexCom 115. Is that correct?</p> <p>10 A I used them both. And since I didn't have</p> <p>11 access to this log prior to this hearing, yes, I had to</p> <p>12 use the Denbury work which included a correlation cross</p> <p>13 section, which is our Exhibit 102, which is certainly</p> <p>14 the work of Denbury. And -- but I corroborate and</p> <p>15 approve of the correlation that they have colored in,</p> <p>16 and it shows quite clearly the separating shale, which,</p> <p>17 like I say, is between approximately 5700 and 5740.</p> <p>18 Q (BY MS. MENDOZA) Okay. So let me make sure</p> <p>19 because I want to make sure we're all on the same page.</p> <p>20 On TexCom Exhibit 102, I believe there are</p> <p>21 three wells that are on there. One is TexCom WDW410,</p> <p>22 one is the Madeley well that's the type log for the</p> <p>23 field, and one is the Wapiti operating 2315D. Is that</p> <p>24 correct?</p> <p>25 A Correct.</p>	<p style="text-align: right;">1932</p> <p>1 marking, that -- on the -- on TexCom Exhibit 115, that</p> <p>2 one doesn't show this correlation?</p> <p>3 MR. RILEY: Objection. There's no</p> <p>4 evidence or testimony that he marked anything.</p> <p>5 MS. MENDOZA: No, I'm asking, "Does it</p> <p>6 show" --</p> <p>7 MR. RILEY: You said --</p> <p>8 JUDGE WALSTON: Let her finish her</p> <p>9 response.</p> <p>10 MS. MENDOZA: I'm sorry. I will make sure</p> <p>11 that I'm clear on this.</p> <p>12 Q (BY MS. MENDOZA) So we should take away from</p> <p>13 this that on TexCom Exhibit 115, you didn't make any</p> <p>14 marks to line up these numbers. Is that correct?</p> <p>15 A No. No, I did not.</p> <p>16 Q Okay.</p> <p>17 JUDGE EGAN: That's the one they have one</p> <p>18 copy of? Okay. Exhibit 115 is the one that we only</p> <p>19 have a copy of? Okay.</p> <p>20 And can I just ask a clarifying question?</p> <p>21 From the green line on Exhibit 102, just so I make sure</p> <p>22 I understand how this works --</p> <p>23 JUDGE WALSTON: The green line, this goes</p> <p>24 across --</p> <p>25 JUDGE EGAN: Right.</p>
<p style="text-align: right;">1931</p> <p>1 Q Okay. And now, let's look over here at TexCom</p> <p>2 Exhibit 102, the WDW315. And I believe you were</p> <p>3 pointing me to -- it looks to me sort of some</p> <p>4 brown-green. The colors are very poor on this. But to</p> <p>5 me it looks like it starts around --</p> <p>6 MR. RILEY: I'm sorry, Judge.</p> <p>7 Q (BY MS. MENDOZA) Is that correct?</p> <p>8 MR. RILEY: This is Denbury's exhibit.</p> <p>9 I'm sorry if the colors are poor.</p> <p>10 MS. MENDOZA: Well, no, I was just</p> <p>11 commenting because it is a poor color copy here.</p> <p>12 Q (BY MS. MENDOZA) So let's try -- I think you</p> <p>13 pointed to -- when we were talking about the</p> <p>14 correlation, you pointed in WDW315 to something that was</p> <p>15 in the vicinity of 5680 to 6,040 feet. Is that correct?</p> <p>16 A That is correct.</p> <p>17 Q And that's all shown in one color?</p> <p>18 A That is correct.</p> <p>19 Q Okay. And then it moves across the page. Is</p> <p>20 that correct? Is that what you're saying?</p> <p>21 A Correct. Correct.</p> <p>22 Q Okay.</p> <p>23 A It's correlate -- that interval is correlated</p> <p>24 into the other two wells.</p> <p>25 Q Okay. And so on the other thing that you were</p>	<p style="text-align: right;">1933</p> <p>1 JUDGE WALSTON: -- the page. There's two</p> <p>2 of them.</p> <p>3 WITNESS LANGHUS: Right. They -- yes.</p> <p>4 JUDGE WALSTON: What are those?</p> <p>5 WITNESS LANGHUS: Oh, there's -- there are</p> <p>6 two green lines. One is the -- there's one that's</p> <p>7 straight across the --</p> <p>8 JUDGE EGAN: That looks black to me.</p> <p>9 THE WITNESS: -- cross section, and it's</p> <p>10 marked Cockfield.</p> <p>11 JUDGE EGAN: That appears to be black as</p> <p>12 opposed to green, but I don't know.</p> <p>13 JUDGE WALSTON: I'll vote for dark green.</p> <p>14 (Laughter)</p> <p>15 JUDGE WALSTON: We see the line you're</p> <p>16 talking about.</p> <p>17 JUDGE EGAN: Okay. Go ahead.</p> <p>18 WITNESS LANGHUS: Okay. And then somewhat</p> <p>19 down the page is a, more or less, jagged well -- a, more</p> <p>20 or less, jagged line that's also dark green. And the --</p> <p>21 this would be the base of the Conroe unitized interval</p> <p>22 which is what has been entered into evidence before, in</p> <p>23 the 207 hearing. This would be the base of the upper</p> <p>24 Cockfield unit or the top of the middle.</p> <p>25 JUDGE EGAN: Is there a reason why the</p>

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1934	<p>1 unitization changes from -- the line goes -- is jagged</p> <p>2 going up from WDW --</p> <p>3 WITNESS LANGHUS: Oh, the base of the --</p> <p>4 the base of the unit?</p> <p>5 JUDGE EGAN: Yes.</p> <p>6 WITNESS LANGHUS: Yes. That's the</p> <p>7 stratigraphy or the way the sands correlate within the</p> <p>8 area so that in the Wapiti section, the sand is thinner,</p> <p>9 somewhat thinner, and it gets thicker as you go to</p> <p>10 the -- whatever direction that is to the left.</p> <p>11 Q (BY MS. MENDOZA) And, Dr. Langhus, when you</p> <p>12 say "stratigraphy," you mean layers?</p> <p>13 A Correct. Correct.</p> <p>14 Q And so that I'm clear, you looked at the</p> <p>15 correlation? You agree with the correlation that was</p> <p>16 done here?</p> <p>17 A Oh, yes. Yes.</p> <p>18 Q And can you tell me where in WDW410 this shows</p> <p>19 the upper Cockfield sands? Can you show me what depth?</p> <p>20 MR. RILEY: You mean other than --</p> <p>21 JUDGE WALSTON: Just so we're clear --</p> <p>22 MR. RILEY: -- where they're labeled? I'm</p> <p>23 sorry.</p> <p>24 JUDGE WALSTON: -- he's referring to</p> <p>25 Exhibit 102?</p>	1936	<p>1 there, you have the Jackson shale. Correct?</p> <p>2 A Yes.</p> <p>3 Q Okay. So actually, then, your proposed</p> <p>4 injection zone ends somewhere below the Jackson shale.</p> <p>5 Correct?</p> <p>6 A Yes. Well, yes. Yes.</p> <p>7 Q Thank you.</p> <p>8 By any chance, Dr. Langhus, in the sea of</p> <p>9 papers, do you have TexCom Exhibit 6, Page 85? It would</p> <p>10 be probably the first volume of the application.</p> <p>11 JUDGE EGAN: Do you? Oh.</p> <p>12 MR. RILEY: We have one.</p> <p>13 MS. MENDOZA: I have an --</p> <p>14 MR. RILEY: We have a copy.</p> <p>15 MS. MENDOZA: -- extra copy of it that I</p> <p>16 can --</p> <p>17 MR. RILEY: No, we prefer to use --</p> <p>18 MS. MENDOZA: -- of the page, but I'm</p> <p>19 happy to have him use yours.</p> <p>20 MR. RILEY: That's great. Thank you.</p> <p>21 Q (BY MS. MENDOZA) Did you -- while we're</p> <p>22 looking for that, I'll ask just a few preliminary</p> <p>23 questions. I'm confident that somewhere in the</p> <p>24 transcript, there's probably testimony.</p> <p>25 Did you prepare the geologic portions of</p>
1935	<p>1 Q (BY MS. MENDOZA) This is on exhibit --</p> <p>2 WITNESS LANGHUS: Yes.</p> <p>3 Q (BY MS. MENDOZA) -- TexCom Exhibit 102. I was</p> <p>4 wanting to know if you know where the upper Cockfield</p> <p>5 sands are?</p> <p>6 MR. RILEY: There are labels on there.</p> <p>7 Q (BY MS. MENDOZA) There is no label that says</p> <p>8 "upper Cockfield sands" on TexCom --</p> <p>9 MR. RILEY: Well, I see --</p> <p>10 Q (BY MS. MENDOZA) -- Exhibit 102. Is there,</p> <p>11 Dr. Langhus?</p> <p>12 JUDGE WALSTON: Let the witness answer the</p> <p>13 question.</p> <p>14 MR. RILEY: Sure.</p> <p>15 A There isn't, no. No.</p> <p>16 Q (BY MS. MENDOZA) And are you aware of what the</p> <p>17 upper Cockfield sands are?</p> <p>18 A There are a couple of versions to it. The main</p> <p>19 upper Cockfield sands, as called that in Exxon's</p> <p>20 unitization report, includes those, more or less,</p> <p>21 contiguous sands that go up to approximately 5130. And</p> <p>22 then there are the Conroe, parentheses, upper Cockfield</p> <p>23 sands that are somewhat discontinuous and separated from</p> <p>24 the main sand package, and those go up to about 4900.</p> <p>25 Q And then above that particular level, above</p>	1937	<p>1 the TexCom's application that's been submitted?</p> <p>2 A I did, yes.</p> <p>3 Q And I'm sure when you get this, there's a</p> <p>4 Section 5 that seems to be talking a lot about the</p> <p>5 different zones and the injection areas. Is that part</p> <p>6 of your work?</p> <p>7 A That would be, yes.</p> <p>8 Q Okay.</p> <p>9 JUDGE WALSTON: Which page were you</p> <p>10 referring to?</p> <p>11 MS. MENDOZA: TexCom Exhibit 6, Page 85.</p> <p>12 Q (BY MS. MENDOZA) And on TexCom 6, Page 85,</p> <p>13 there's a Section V; B, as in boy; 3; C, as in cat; says</p> <p>14 "Injection Zone"?</p> <p>15 A Correct.</p> <p>16 Q I want to read -- is this part of the work that</p> <p>17 you did?</p> <p>18 A Yes.</p> <p>19 Q And I wanted to read the second sentence to you</p> <p>20 and make sure this was your work.</p> <p>21 "These three thick sand packages are</p> <p>22 separated by persistent shales, but the shales appear</p> <p>23 not to be thick enough to isolate the individual sand</p> <p>24 members either stratigraphically or across faults in the</p> <p>25 AOR." Is that correct? Did I read it correctly?</p>

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<p style="text-align: right;">1938</p> <p>1 A That is correct.</p> <p>2 Q Okay. And "stratigraphically" means layers.</p> <p>3 Correct?</p> <p>4 A Correct.</p> <p>5 MR. RILEY: May I approach and trade my</p> <p>6 exhibit?</p> <p>7 MS. MENDOZA: Yes.</p> <p>8 JUDGE WALSTON: Are you through with it?</p> <p>9 MS. MENDOZA: I am done with that exhibit.</p> <p>10 JUDGE WALSTON: All right.</p> <p>11 MS. MENDOZA: Or at least, I hope that I</p> <p>12 am. Right now I'm not anticipating any more questions.</p> <p>13 Q (BY MS. MENDOZA) Do you know -- I may have to</p> <p>14 take that back and have another page in Exhibit 6, but</p> <p>15 let's see.</p> <p>16 If I understand correctly, your current --</p> <p>17 from Exhibit 114, you're currently saying that the</p> <p>18 thickness of the shale in WDW315, or WDW410, at the top</p> <p>19 of the lower Cockfield is 38 feet. Is that your</p> <p>20 testimony?</p> <p>21 A That's correct.</p> <p>22 Q And previously, when you submitted this to the</p> <p>23 TCEQ, you said that that same shale was 27-foot thick.</p> <p>24 Is that correct?</p> <p>25 A I don't recall that.</p>	<p style="text-align: right;">1940</p> <p>1 A Yes.</p> <p>2 Q -- to end of that line, and let me read this to</p> <p>3 you.</p> <p>4 "The lower contact is the discontinuity</p> <p>5 between a persistent 27-foot shale at the base of the</p> <p>6 middle member and the first of a series of finely-bedded</p> <p>7 sands and shales at the top of the lower member." Did I</p> <p>8 read that correctly?</p> <p>9 A Yes, you did.</p> <p>10 Q That would be the 27-foot shale that I</p> <p>11 referenced in my prior question. Isn't that correct?</p> <p>12 A Yes, appears to be.</p> <p>13 Q Okay. And while we have that one open, I</p> <p>14 believe we were on page -- let's see -- 82. Can you</p> <p>15 flip over to Page 123 of TexCom Exhibit 6?</p> <p>16 A Yes.</p> <p>17 Q Do you believe that the 38-foot shale that</p> <p>18 you've described in 114 is a thick shale?</p> <p>19 A No, I wouldn't really call it a thick shale,</p> <p>20 but it's a shale. I wouldn't call it a thick shale.</p> <p>21 Q Okay. I also want to make sure that I'm clear.</p> <p>22 Is it your understanding that the lower</p> <p>23 and middle Cockfield sand members are the injection</p> <p>24 interval?</p> <p>25 A I get confused. The lower Cockfield unit is</p>
<p style="text-align: right;">1939</p> <p>1 Q Okay. If we could look at TexCom Exhibit 6,</p> <p>2 Page 75?</p> <p>3 MR. RILEY: TexCom Exhibit 6, Page 75.</p> <p>4 Let me -- do you want me to provide it to the witness,</p> <p>5 or you want me to look it up?</p> <p>6 MS. MENDOZA: I can provide you with a</p> <p>7 one-page excerpt out of it, and while we're locating</p> <p>8 the...</p> <p>9 Q (BY MS. MENDOZA) Dr. Langhus, I'm handing you</p> <p>10 TexCom Exhibit 6, Page 75, and there is a subheading on</p> <p>11 that. And I want to make sure this is your work. Is</p> <p>12 that correct?</p> <p>13 A Correct.</p> <p>14 Q And there is a -- down on that page, there is a</p> <p>15 header that says, "Middle Cockfield Member." Is that</p> <p>16 correct?</p> <p>17 A Correct.</p> <p>18 Q And the middle Cockfield is immediately above</p> <p>19 the lower Cockfield, in the terms of the TexCom permit.</p> <p>20 Is that correct?</p> <p>21 A Correct.</p> <p>22 Q And if you look in that first paragraph below</p> <p>23 "Middle Cockfield Member," about halfway down, the line</p> <p>24 begins with the word between, "between the basal shale."</p> <p>25 And let's go --</p>	<p style="text-align: right;">1941</p> <p>1 the only interval that TexCom plans to inject into. The</p> <p>2 entire Cockfield unit is the regulatory unit. Whatever</p> <p>3 that -- whatever the larger of the two injection zone or</p> <p>4 injection interval, which ever is the larger, that's the</p> <p>5 upper, middle, and lower Cockfield.</p> <p>6 Q Okay. And I agree, there's certainly been a</p> <p>7 lot of confusion over that.</p> <p>8 So it's your testimony that TexCom only</p> <p>9 intends to inject into what you've called the lower</p> <p>10 Cockfield?</p> <p>11 A The lower Cockfield, yes.</p> <p>12 Q Okay. Has TexCom ever planned to inject into</p> <p>13 an interval other than the lower Cockfield?</p> <p>14 MR. RILEY: From WDW410 or --</p> <p>15 MS. MENDOZA: On WDW410.</p> <p>16 MR. RILEY: -- on some other place?</p> <p>17 MS. MENDOZA: Yes.</p> <p>18 MR. RILEY: All right.</p> <p>19 A As far as I know, no.</p> <p>20 MS. MENDOZA: Your Honor, may I approach</p> <p>21 the witness?</p> <p>22 Q (BY MS. MENDOZA) I wanted to hand you a</p> <p>23 document that was produced to us.</p> <p>24 MR. RILEY: May I see it, Counsel?</p> <p>25 Q (BY MS. MENDOZA) That Mr. Riley has produced</p>

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1942	1944
<p>1 to us.</p> <p>2 MR. RILEY: May I see it, Counsel?</p> <p>3 MS. MENDOZA: Yes, I'll bring a copy of</p> <p>4 it.</p> <p>5 JUDGE WALSTON: She'll bring it to you</p> <p>6 before she asks her questions.</p> <p>7 Q (BY MS. MENDOZA) Take a look at that.</p> <p>8 MR. RILEY: Typically it would be</p> <p>9 presented to counsel before presented to the witness.</p> <p>10 MS. MENDOZA: I only have one -- I only, I</p> <p>11 believe, have one.</p> <p>12 MR. RILEY: Still would present it to</p> <p>13 counsel first.</p> <p>14 MS. MENDOZA: Let me make sure. I may</p> <p>15 only have one copy. Let me go and --</p> <p>16 Q (BY MS. MENDOZA) Dr. Langhus, I'm sorry, may I</p> <p>17 borrow this back --</p> <p>18 A Yes.</p> <p>19 Q -- and take it to Mr. Riley? I only have one</p> <p>20 copy of it. I'm sorry.</p> <p>21 MS. GOSS: May the Executive Director have</p> <p>22 a look at that, please?</p> <p>23 MR. RILEY: Could you give me -- while</p> <p>24 you're doing that, Diane, could you tell me the Bates</p> <p>25 label number on it?</p>	<p>1 Q When was the last time you turned over emails</p> <p>2 in this matter to TexCom's counsel?</p> <p>3 A I guess when she asked -- when Nikki asked.</p> <p>4 The last time, I guess, was a couple of days ago or</p> <p>5 maybe yesterday.</p> <p>6 Q Did you turn over some emails to TexCom</p> <p>7 yesterday?</p> <p>8 A No.</p> <p>9 Q Did you turn over some a few days ago?</p> <p>10 A No.</p> <p>11 Q Have you had any recent emails about this case?</p> <p>12 A I have not.</p> <p>13 Q Have you had any emails about this case since</p> <p>14 the last hearing?</p> <p>15 A I don't believe so.</p> <p>16 Q Okay. And so this -- so -- and the other</p> <p>17 person on this is Mark Layne. Is that correct?</p> <p>18 A Correct.</p> <p>19 Q And he is -- at least at the time of this</p> <p>20 email, was an employee of ALL?</p> <p>21 A Correct.</p> <p>22 Q Okay. And so do you have any reason to doubt</p> <p>23 that this is your email?</p> <p>24 A No.</p> <p>25 Q Okay. And I want to direct your attention to</p>
1943	1945
<p>1 MS. GOSS: May 9th, 2009.</p> <p>2 MR. RILEY: The Bates label --</p> <p>3 MS. GOSS: I'm sorry.</p> <p>4 MR. RILEY: -- at the bottom.</p> <p>5 MS. GOSS: Sure. APP007059.</p> <p>6 Q (BY MS. MENDOZA) Dr. Langhus, now let me hand</p> <p>7 you this.</p> <p>8 MS. MENDOZA: And if I can have the</p> <p>9 indulgence to stand here for a moment?</p> <p>10 JUDGE WALSTON: That's fine.</p> <p>11 MS. MENDOZA: I only have one copy.</p> <p>12 Q (BY MS. MENDOZA) Dr. Langhus, do you recognize</p> <p>13 APP007059?</p> <p>14 A I don't really recognize it, but it says I</p> <p>15 wrote it.</p> <p>16 (Laughter)</p> <p>17 Q (BY MS. MENDOZA) Do you have any reason to</p> <p>18 doubt that you wrote this?</p> <p>19 A I guess not.</p> <p>20 Q It does appear to be the printout of an email,</p> <p>21 doesn't it?</p> <p>22 A It does.</p> <p>23 Q And did you turn over all your emails in this</p> <p>24 matter to counsel for TexCom?</p> <p>25 A I did.</p>	<p>1 near the bottom of this page, the next-to-last</p> <p>2 paragraph, right before you say "stay tuned." Okay.</p> <p>3 And I want to read the first sentence to you.</p> <p>4 "I don't know whether we can say that</p> <p>5 there is a competent confining zone anywhere within the</p> <p>6 Cockfield." Did I read that correctly?</p> <p>7 A Correct.</p> <p>8 Q And then the next sentence says, "I think we'd</p> <p>9 have to permit the entire package from 5134 to 6390.</p> <p>10 Did I read that correctly?</p> <p>11 A Correct.</p> <p>12 MS. MENDOZA: Your Honor, we'd like to</p> <p>13 mark this as our next Denbury exhibit and admit it into</p> <p>14 the record.</p> <p>15 MR. RILEY: May I see it again? I didn't</p> <p>16 have a good look at it. There may be other matters in</p> <p>17 there that I would not --</p> <p>18 JUDGE WALSTON: Let counsel take a look</p> <p>19 it, and I don't know what the next number is.</p> <p>20 MS. MENDOZA: Let me go on and get it</p> <p>21 marked, and then I'll bring it over to Mr. Riley.</p> <p>22 MR. RILEY: Thank you.</p> <p>23 (Exhibit Denbury No. 27 marked)</p> <p>24 MS. MENDOZA: Your Honor, this has been</p> <p>25 marked as Denbury Exhibit 27.</p>

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1946	1948
<p>1 MR. RILEY: "Dudes"? Really? "Dudes"?</p> <p>2 (Laughter)</p> <p>3 WITNESS LANGHUS: That's why I say I don't</p> <p>4 recognize it, but it's got my name at the top.</p> <p>5 (Laughter)</p> <p>6 MR. RILEY: No objection except to the</p> <p>7 "dudes" part.</p> <p>8 JUDGE WALSTON: Any other objections?</p> <p>9 MS. GOSS: The Executive Director would</p> <p>10 like to request a copy of the exhibit.</p> <p>11 MS. MENDOZA: We'll arrange with the court</p> <p>12 reporter to make a copy.</p> <p>13 JUDGE WALSTON: So Denbury Exhibit No. 27</p> <p>14 is admitted.</p> <p>15 (Exhibit Denbury No. 27 admitted)</p> <p>16 MS. MENDOZA: Your Honor, if I can -- this</p> <p>17 might be a good time to break for lunch.</p> <p>18 JUDGE WALSTON: No, go ahead -- no, we</p> <p>19 want to try and finish up.</p> <p>20 MS. MENDOZA: We're going to go on? Okay.</p> <p>21 Your Honor, if I may approach and look at</p> <p>22 one exhibit to see if I have any more questions about</p> <p>23 it?</p> <p>24 Q (BY MS. MENDOZA) Mr. Langhus, if I can take --</p> <p>25 Dr. Langhus -- I'm sorry -- if I can ask you to take a</p>	<p>1 TexCom Exhibit 114. You said that the you looked at the</p> <p>2 well logs that were available to you here.</p> <p>3 A Correct.</p> <p>4 Q Would you like to have had more well logs?</p> <p>5 A Of course. I'd like to have 500 well logs</p> <p>6 within -- that go -- that drill all the way through the</p> <p>7 lower Cockfield, but there aren't that many.</p> <p>8 Q Are you aware that Denbury produced its entire</p> <p>9 well files to TexCom --</p> <p>10 MR. RILEY: Objection.</p> <p>11 Q (BY MS. MENDOZA) -- in this case?</p> <p>12 MR. RILEY: Objection. Counsel's</p> <p>13 suggesting that there were wells drilled into the lower</p> <p>14 Cockfield. The witness qualified his answer as to the</p> <p>15 number of wells in the --</p> <p>16 MS. MENDOZA: I'm not making any</p> <p>17 suggestion. I'm asking him if he's aware of something.</p> <p>18 JUDGE WALSTON: I'll overrule the</p> <p>19 objection.</p> <p>20 You can answer the question.</p> <p>21 Q (BY MS. MENDOZA) Are you aware that Denbury</p> <p>22 produced its entire well files to TexCom in this case?</p> <p>23 A No.</p> <p>24 Q Would it have been helpful to see the well</p> <p>25 files for the field operator and all of the well logs</p>
1947	1949
<p>1 look at TexCom Exhibit 102 for just one more moment.</p> <p>2 A Yes.</p> <p>3 Q Are you familiar with the Conroe unitized</p> <p>4 interval?</p> <p>5 A Yes.</p> <p>6 Q And the Conroe unitized interval overlaps</p> <p>7 TexCom's proposed injection zone. Is that correct?</p> <p>8 A It does.</p> <p>9 Q Thank you.</p> <p>10 Dr. Langhus, can you tell me what your</p> <p>11 understanding is of the term of a "normally pressured</p> <p>12 reservoir"?</p> <p>13 A I don't know if that has any meaning to me or</p> <p>14 not. I don't think so. I mean, a normally pressurized</p> <p>15 reservoir would mean that it's not an abnormally</p> <p>16 pressurized reservoir.</p> <p>17 Q So what would an abnormally pressurized</p> <p>18 reservoir be?</p> <p>19 A Well, you could certainly have an overpressured</p> <p>20 reservoir caused by unusual sealing characteristics, and</p> <p>21 you can also have an underpressurized reservoir caused</p> <p>22 by a number of different geological phenomenon. But</p> <p>23 whether or not I would call those normal or abnormal or</p> <p>24 subnormal or what, it doesn't have a lot of meaning.</p> <p>25 Q Dr. Langhus, if you will, take a look back at</p>	<p>1 that are associated with the hundreds and probably 5-,</p> <p>2 600 holes that are in the ground out there?</p> <p>3 A No, because the vast majority did not go into</p> <p>4 the lower Cockfield.</p> <p>5 Q How many went into the lower Cockfield?</p> <p>6 A I don't know. There were six that I could find</p> <p>7 from the logs that I could lay my hands on here. This</p> <p>8 was not supposed to be a hearing about geology. We beat</p> <p>9 that subject to death.</p> <p>10 JUDGE WALSTON: Dr. Langhus, you're going</p> <p>11 beyond the question now.</p> <p>12 (Laughter)</p> <p>13 THE WITNESS: Okay. Sorry.</p> <p>14 A I don't know how many -- looking at our --</p> <p>15 yeah, I don't know.</p> <p>16 Q (BY MS. MENDOZA) So if there were more well</p> <p>17 logs that drilled into the lower Cockfield, you would</p> <p>18 have found those helpful to your analysis. Correct?</p> <p>19 A If, yes.</p> <p>20 Q Do you believe looking at the well logs from</p> <p>21 the unit operator would also be helpful in determining</p> <p>22 whether you have unplugged wells?</p> <p>23 A Not looking at the logs. It would be helpful</p> <p>24 to look at the completions and reports like that, but I</p> <p>25 would assume that those same -- that those same pieces</p>

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<p style="text-align: right;">1950</p> <p>1 of paper would be available at the Railroad Commission.</p> <p>2 Q So do you -- is it your testimony, then, that</p> <p>3 the operator of the field is going to have no more</p> <p>4 documents about the wells than the Railroad Commission</p> <p>5 has?</p> <p>6 MR. RILEY: Objection. That's -- there's</p> <p>7 not even a setup to that question.</p> <p>8 MS. MENDOZA: I'm asking him if that's his</p> <p>9 testimony.</p> <p>10 MR. RILEY: The question was about</p> <p>11 unplugged wells.</p> <p>12 JUDGE WALSTON: I think the question was,</p> <p>13 would you want more logs to see if the wells are --</p> <p>14 MS. MENDOZA: Well, and then he said no.</p> <p>15 But he assumed there would be these other things, but</p> <p>16 all those documents would be at the Railroad Commission.</p> <p>17 And so I'm asking him if it's his testimony that the</p> <p>18 operator of the field would have no more information on</p> <p>19 these wells in their files than you would find at the</p> <p>20 Railroad Commission.</p> <p>21 MR. RILEY: As it pertains to plugged or</p> <p>22 unplugged? Is that the --</p> <p>23 MS. MENDOZA: No, I can ask a --</p> <p>24 JUDGE WALSTON: I'll overrule the</p> <p>25 objection.</p>	<p style="text-align: right;">1952</p> <p>1 cut while drilling the WDW315 well by which we were able</p> <p>2 to confirm the accuracy of the reference materials?" Do</p> <p>3 you remember saying that?</p> <p>4 A Wow. No, I don't.</p> <p>5 MS. MENDOZA: Your Honor, may I approach</p> <p>6 the witness?</p> <p>7 JUDGE WALSTON: Just so the record is</p> <p>8 clear, if you have a page number or exhibit number.</p> <p>9 MS. MENDOZA: Yes, Your Honor.</p> <p>10 Q (BY MS. MENDOZA) I am pulling out TexCom</p> <p>11 Exhibit 57, Page 9, Line 25. Let me hand you the cover</p> <p>12 page --</p> <p>13 A Okay.</p> <p>14 Q -- as well, so you can take a look at it. And</p> <p>15 if I can stand right here, this is my only copy.</p> <p>16 Dr. Langhus, now, I just want to read this</p> <p>17 to you. "We were also fortunate to have the complete</p> <p>18 geological cores" --</p> <p>19 MR. RILEY: Can the witness not read it</p> <p>20 himself and see if --</p> <p>21 JUDGE WALSTON: She can read it, if she</p> <p>22 wants. Go ahead.</p> <p>23 MR. RILEY: She just read it, Judge.</p> <p>24 JUDGE WALSTON: Well, she can read it</p> <p>25 again.</p>
<p style="text-align: right;">1951</p> <p>1 You can answer that question.</p> <p>2 A No. Certainly, the operator -- any diligent</p> <p>3 operator is going to have a great deal more information</p> <p>4 on their production and their producing wells than</p> <p>5 exists at the Railroad Commission.</p> <p>6 Q (BY MS. MENDOZA) Thank you.</p> <p>7 And have you -- as you sit here today,</p> <p>8 have you seen the entirety of Denbury's well logs --</p> <p>9 A No.</p> <p>10 Q -- or well files?</p> <p>11 A No.</p> <p>12 Q Dr. Langhus, and I am remiss. I don't know</p> <p>13 that I've introduced myself to you because I just</p> <p>14 realized I had not been here for -- well, I know I had</p> <p>15 not been here for the first hearing. But I'm Mary</p> <p>16 Mendoza. I represent Denbury. We weren't here for the</p> <p>17 first hearing. But I have gone back over your testimony</p> <p>18 in the first hearing, and I had a question.</p> <p>19 Do you remember in the first hearing, you</p> <p>20 filed prefiled testimony? Do you --</p> <p>21 A Yes, I did.</p> <p>22 Q -- remember that?</p> <p>23 A I do, yes.</p> <p>24 Q And do you remember saying that "We were also</p> <p>25 fortunate to have the complete geologic cores that were</p>	<p style="text-align: right;">1953</p> <p>1 MR. RILEY: Thank you. Thank you.</p> <p>2 Q (BY MS. MENDOZA) Dr. Langhus, I'm sorry. "We</p> <p>3 were also fortunate to have the complete geological</p> <p>4 cores that were cut while drilling the WDW315 well by</p> <p>5 which we were able to confirm the accuracy of the</p> <p>6 reference materials." Did I read that correctly?</p> <p>7 A Yes, that's what it says.</p> <p>8 Q And was that your testimony in the first</p> <p>9 hearing?</p> <p>10 A It was.</p> <p>11 Q And did you have the complete geological cores</p> <p>12 for WDW315?</p> <p>13 A TexCom did.</p> <p>14 Q TexCom possessed those cores, and you</p> <p>15 physically saw the cores?</p> <p>16 A No, no. No, I didn't. I did -- it doesn't say</p> <p>17 "I." But, no, it --</p> <p>18 Q Who does "we" refer to, then?</p> <p>19 A The Applicants.</p> <p>20 Q TexCom had those cores? They told you they had</p> <p>21 those cores?</p> <p>22 A I assumed that they did. We certainly had the</p> <p>23 analytical report. That, I had.</p> <p>24 Q You had the complete analytical report?</p> <p>25 A I had a copy of the analytical report. Whether</p>

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1954	1956
<p>1 or not it's complete, I don't know.</p> <p>2 Q Did it have pictures in it?</p> <p>3 A I'm getting confused with all the other core</p> <p>4 reports I've seen since then, and I don't remember.</p> <p>5 Q Do most core reports have pictures in it?</p> <p>6 A Yes.</p> <p>7 Q Did this core report have pictures in it so</p> <p>8 that you could confirm the accuracy of the information</p> <p>9 that you presented in your testimony?</p> <p>10 A Like I say, I don't recall.</p> <p>11 Q So if somebody took from this testimony that</p> <p>12 you had actually seen the geological cores, they would</p> <p>13 have been mistaken?</p> <p>14 A Correct.</p> <p>15 Q Okay. Dr. Langhus, how do you know that TexCom</p> <p>16 had those cores?</p> <p>17 A I guess it was just an assumption.</p> <p>18 Q So you had no basis for the testimony that you</p> <p>19 just gave, that TexCom had those cores?</p> <p>20 A That's what I said.</p> <p>21 Q And just to be clear, then, if you did not have</p> <p>22 the core, you would not have verified -- or you would</p> <p>23 not have confirmed the accuracy of the reference</p> <p>24 materials by using the core. Correct?</p> <p>25 A I should have said I used the core report.</p>	<p>1 Did I read that correctly?</p> <p>2 A Correct.</p> <p>3 Q Is this another case where you were not precise</p> <p>4 in your prior testimony?</p> <p>5 A I think this is fairly precise. Geological</p> <p>6 data would have been contained in the core report.</p> <p>7 Q I don't see the word "report" in the question.</p> <p>8 Do you see the word "report" in the question?</p> <p>9 A No.</p> <p>10 Q So, perhaps, when you answered this question,</p> <p>11 you should have said, "No, but I did see the core</p> <p>12 report"?</p> <p>13 A Perhaps I should have said other things, too.</p> <p>14 (Laughter)</p> <p>15 A I think I stand by the fact that this describes</p> <p>16 pretty well what I did.</p> <p>17 Q (BY MS. MENDOZA) Pretty well, but not exactly</p> <p>18 what you did. Is that correct?</p> <p>19 A When you're talking geological data, you</p> <p>20 usually don't talk about the physical core itself.</p> <p>21 Q So the physical core is not important --</p> <p>22 MR. RILEY: May the witness --</p> <p>23 Q (BY MS. MENDOZA) -- in geological data?</p> <p>24 MR. RILEY: -- finish his answer?</p> <p>25 JUDGE WALSTON: I thought he had finished</p>
1955	1957
<p>1 Q You weren't precise when you drafted your last</p> <p>2 testimony?</p> <p>3 MR. RILEY: Objection.</p> <p>4 A Correct, in that --</p> <p>5 MR. RILEY: Objection.</p> <p>6 A -- instance.</p> <p>7 JUDGE WALSTON: Hang on. He's got an</p> <p>8 objection.</p> <p>9 MR. RILEY: Precise? What level of</p> <p>10 precision are we talking?</p> <p>11 JUDGE WALSTON: Well, I think the witness</p> <p>12 understood it and was about to answer, so I'll overrule</p> <p>13 the objection.</p> <p>14 A In that instance, I apparently was not precise.</p> <p>15 Q (BY MS. MENDOZA) Dr. Langhus, if I may turn</p> <p>16 your attention to TexCom Exhibit 57, Line 10.</p> <p>17 JUDGE WALSTON: What page?</p> <p>18 MS. MENDOZA: TexCom -- I'm sorry --</p> <p>19 TexCom Exhibit 57, Page 10.</p> <p>20 Q (BY MS. MENDOZA) The question starting at</p> <p>21 Line 3, if I can read that to you.</p> <p>22 It says, "Did the geological data</p> <p>23 contained in the WDW315 core, in fact, confirm the</p> <p>24 accuracy of the reference material?</p> <p>25 "Answer: Yes."</p>	<p>1 his answer.</p> <p>2 WITNESS LANGHUS: I did.</p> <p>3 MR. RILEY: And may Ms. Mendoza sit down?</p> <p>4 MS. MENDOZA: I'm sorry. It's my only</p> <p>5 copy of the testimony. If we have an extra copy here, I</p> <p>6 would be glad.</p> <p>7 JUDGE WALSTON: Are you through asking</p> <p>8 questions about the document itself?</p> <p>9 MS. MENDOZA: No, unfortunately, Your</p> <p>10 Honor, I'm not.</p> <p>11 Q (BY MS. MENDOZA) Doctor?</p> <p>12 MR. RILEY: Ms. Mendoza is hawking over</p> <p>13 the witness, and it doesn't seem appropriate to me that</p> <p>14 she cuts the witness off. She's moving at a rapid pace.</p> <p>15 This witness is not being allowed to answer.</p> <p>16 JUDGE WALSTON: I think he had fully</p> <p>17 answered the question, and she's standing an appropriate</p> <p>18 distance away. So I'll overrule your objection.</p> <p>19 Q (BY MS. MENDOZA) Dr. Langhus, is having the</p> <p>20 geologic core actually important in geological work?</p> <p>21 A Sometimes it is, especially in the Gulf Coast.</p> <p>22 In my -- if I might be verbose here in my answer.</p> <p>23 In the Gulf Coast, almost all the cores</p> <p>24 that I deal with are called shot hole cores or sidewall</p> <p>25 cores. In that case, the -- it's not important to look</p>

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<p style="text-align: right;">1958</p> <p>1 at the core. You get the analysis from a lab such as</p> <p>2 Omni. I think maybe Omni is the only one left. But</p> <p>3 anyway, sometimes the core is important; sometimes it's</p> <p>4 not. And always, the geological core report is</p> <p>5 important.</p> <p>6 Q And so it would have been important to have the</p> <p>7 complete geological report?</p> <p>8 A Yes.</p> <p>9 Q Dr. Langhus, if I can borrow back that</p> <p>10 testimony, so that I will...</p> <p>11 (Pause)</p> <p>12 Q (BY MS. MENDOZA) Dr. Langhus, I'd like to</p> <p>13 direct your attention to TexCom Exhibit 57, Page 22,</p> <p>14 starting on Line 25 and going through Page 23, Line 5.</p> <p>15 And if I could ask you to read that to yourself, that</p> <p>16 question and answer.</p> <p>17 MS. MENDOZA: And I will say that on</p> <p>18 Page 23, I have marked through the second question and</p> <p>19 answer because I believe the witness changed that at the</p> <p>20 hearing, and I don't plan to ask him about that. But I</p> <p>21 wanted you to know that he's seeing one that I had</p> <p>22 marked through the question and answer that he had</p> <p>23 changed.</p> <p>24 MR. RILEY: I haven't seen it. I would</p> <p>25 need to see what counsel's showing to the witness, if I</p>	<p style="text-align: right;">1960</p> <p>1 MR. RILEY: Well, I really don't know</p> <p>2 where we're going. For now, I won't object. Hopefully</p> <p>3 we can move along.</p> <p>4 Q (BY MS. MENDOZA) Dr. Langhus, I believe the</p> <p>5 question that begins at the bottom of Page 22 is</p> <p>6 discussing whether TexCom's wells would be sited such</p> <p>7 that the injection zone has sufficient permeability,</p> <p>8 porosity, thickness, and aerial extent to prevent</p> <p>9 migration of the fluids into USDWs or freshwater</p> <p>10 aquifers. Is that --</p> <p>11 MR. RILEY: Objection. Objection.</p> <p>12 Counsel said "I believe," and then she's reading. Is it</p> <p>13 the question, or is it her belief what the question says</p> <p>14 that we're addressing? My point is that she ought to</p> <p>15 read from the transcript, if that's what she wants to</p> <p>16 do.</p> <p>17 JUDGE EGAN: And just for -- to help me,</p> <p>18 could you read a little slower?</p> <p>19 MS. MENDOZA: I'm sorry. I can do that.</p> <p>20 JUDGE EGAN: I don't have that in front of</p> <p>21 me, so I'm having to follow along.</p> <p>22 Q (BY MS. MENDOZA) Dr. Langhus, I'll start</p> <p>23 reading on Page 25, Line 22, and if you will follow</p> <p>24 along with me and make sure that I read it correctly.</p> <p>25 "In accordance with 30 Tex. Admin Code,</p>
<p style="text-align: right;">1959</p> <p>1 may.</p> <p>2 JUDGE WALSTON: I thought you had the</p> <p>3 exhibit.</p> <p>4 MR. RILEY: No, she's altered it, is my</p> <p>5 understanding.</p> <p>6 JUDGE WALSTON: Okay. Let him finish</p> <p>7 reading it, and then show it to Mr. Riley before --</p> <p>8 MR. RILEY: Thank you.</p> <p>9 JUDGE WALSTON: -- you ask any questions.</p> <p>10 A Am I supposed to read --</p> <p>11 Q (BY MS. MENDOZA) No.</p> <p>12 A Oh.</p> <p>13 Q I'm sorry. I meant through Line 5.</p> <p>14 MR. RILEY: Might be easier just for him</p> <p>15 to read it out loud, that way I can follow along.</p> <p>16 JUDGE WALSTON: So you could see the part</p> <p>17 that was marked out?</p> <p>18 MR. RILEY: Sure.</p> <p>19 Which part are you having him read?</p> <p>20 MS. MENDOZA: I'm sorry. My understanding</p> <p>21 is that Lines 6 through 16 were replaced by Exhibit 57A.</p> <p>22 I don't intend to ask him any questions about that part,</p> <p>23 but I can show him the replacement and get him to verify</p> <p>24 that I've accurately changed -- I've accurately marked</p> <p>25 out the part that he changed, if you need me to.</p>	<p style="text-align: right;">1961</p> <p>1 Section 331.121(c)(3)(A), will TexCom's wells be sited</p> <p>2 such that the injection zone has sufficient</p> <p>3 permeability, porosity, thickness, and aerial extent to</p> <p>4 prevent migration of fluids into USDWs or freshwater</p> <p>5 aquifers?</p> <p>6 "Answer: Yes. Cores and wire-line logs</p> <p>7 demonstrate that the lower Cockfield injection zone has</p> <p>8 sufficient thickness, porosity, and permeability to</p> <p>9 safely contain the fluid injected throughout the life of</p> <p>10 the TexCom disposal project." Did I read that</p> <p>11 correctly?</p> <p>12 A Correct.</p> <p>13 Q Okay. And on Page 23, Line 3 of TexCom</p> <p>14 Exhibit 57, you again reference cores. Is that another</p> <p>15 case where you're, perhaps, not precise in your</p> <p>16 testimony?</p> <p>17 A No. I'll stand by -- I'm sorry. I'll stand by</p> <p>18 my testimony here, whenever this was, that core is</p> <p>19 sufficient to cover core report.</p> <p>20 Q Okay. So if anybody took from that particular</p> <p>21 statement that you had actually seen the core, the soil</p> <p>22 that came out of the ground, they were mistaken?</p> <p>23 A Correct.</p> <p>24 MS. MENDOZA: Your Honor, we have no</p> <p>25 further questions.</p>

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1962	1964
<p>1 JUDGE WALSTON: Individual Protestants?</p> <p>2 MR. FORSBERG: No questions.</p> <p>3 JUDGE WALSTON: Aligned Protestants?</p> <p>4 MR. WALKER: Just one question, Your</p> <p>5 Honor.</p> <p>6 CROSS-EXAMINATION</p> <p>7 BY MR. WALKER:</p> <p>8 Q Dr. Langhus, we've met before, I believe, have</p> <p>9 we not?</p> <p>10 A We've gone two faults out of three before, yes.</p> <p>11 Q It's good to see you again.</p> <p>12 Dr. Langhus, if another expert in this</p> <p>13 case testified that there was a 250-foot shale layer</p> <p>14 between the middle and lower Cockfield Formations, would</p> <p>15 you agree with that assessment?</p> <p>16 A No.</p> <p>17 MR. WALKER: No further questions, Your</p> <p>18 Honor.</p> <p>19 JUDGE WALSTON: Public Interest Counsel?</p> <p>20 MR. HUMPHREY: No questions, Your Honor.</p> <p>21 JUDGE WALSTON: The Executive Director?</p> <p>22 MS. GOSS: No questions, Your Honor.</p> <p>23 JUDGE WALSTON: Any redirect?</p> <p>24 MR. RILEY: Just a moment. I'm looking at</p> <p>25 the exhibit that was introduced to see if I have any</p>	<p>1 sorry.</p> <p>2 REDIRECT EXAMINATION</p> <p>3 BY MR. RILEY:</p> <p>4 Q Can we safely assume that Denbury Exhibit --</p> <p>5 MS. MENDOZA: I believe it's 27.</p> <p>6 JUDGE WALSTON: Referring to the email?</p> <p>7 MR. RILEY: Yes, sir.</p> <p>8 JUDGE WALSTON: That's 27.</p> <p>9 Q (BY MR. RILEY) Denbury Exhibit 27, do you</p> <p>10 think the date at the top of it is accurate, the best of</p> <p>11 your recollection?</p> <p>12 A What did the date say?</p> <p>13 Q Monday, May 9, 2005, at 5:19 p.m.</p> <p>14 A I have no reason to expect that that's an</p> <p>15 error.</p> <p>16 Q Okay.</p> <p>17 A Sounds reasonable.</p> <p>18 Q Do you know where you were in course of your</p> <p>19 review of information that eventually made its way into</p> <p>20 the TexCom application on May 9th, 2005?</p> <p>21 A I think I had just started.</p> <p>22 Q Well, I don't know if you have it before you,</p> <p>23 but perhaps everyone could look at TexCom Exhibit 6,</p> <p>24 Page 1 of 314.</p> <p>25 JUDGE WALSTON: Page 1?</p>
1963	1965
<p>1 questions about it.</p> <p>2 MS. MENDOZA: And, Your Honor, I did want</p> <p>3 to make sure that we offered Denbury 27. I think we</p> <p>4 did, but I think Mr. Riley didn't object. But I do want</p> <p>5 to make sure that we got that offered and got a ruling.</p> <p>6 MR. RILEY: I don't object. As</p> <p>7 impeachment material, as to any truth asserted here that</p> <p>8 was not questioned specifically, I do object.</p> <p>9 JUDGE EGAN: It appears that you're</p> <p>10 admitted.</p> <p>11 JUDGE WALSTON: Denbury 27 was admitted.</p> <p>12 MS. MENDOZA: Thank you.</p> <p>13 MR. RILEY: I make the qualification,</p> <p>14 then -- or my objection is, there's information on here</p> <p>15 that was not questioned -- the witness was not</p> <p>16 questioned about nor did he confirm, and so my objection</p> <p>17 is that any information he didn't confirm was hearsay --</p> <p>18 is hearsay information; although, he did, more or less,</p> <p>19 authenticate that this email is his.</p> <p>20 MS. MENDOZA: Your Honor, I believe we've</p> <p>21 had a ruling on this.</p> <p>22 JUDGE WALSTON: Right. We'll overrule the</p> <p>23 objection, and we'll give the document the weight that's</p> <p>24 appropriate.</p> <p>25 MR. RILEY: Still a few questions. I'm</p>	<p>1 MR. RILEY: Page 1 of 314.</p> <p>2 Q (BY MR. RILEY) Refers to the date of</p> <p>3 August 1st, 2005, which I believe corresponds to the</p> <p>4 submittal date of the TexCom application.</p> <p>5 A I believe so.</p> <p>6 JUDGE EGAN: Okay. Thank you.</p> <p>7 Q (BY MR. RILEY) As best you know, Dr. Langhus,</p> <p>8 this core that Ms. Mendoza inquired about, is that</p> <p>9 14 feet of core, as far as you know?</p> <p>10 A About 14.4.</p> <p>11 Q Would you agree with me that the lower</p> <p>12 Cockfield Formation that is the proposed injection</p> <p>13 interval in this case is somewhat more extensive than</p> <p>14 14 feet?</p> <p>15 A Yes.</p> <p>16 MR. RILEY: That's all the questions I</p> <p>17 have. Pass the witness.</p> <p>18 JUDGE WALSTON: Lone Star?</p> <p>19 MR. HILL: No questions, Your Honor.</p> <p>20 JUDGE WALSTON: Denbury?</p> <p>21 MS. MENDOZA: No questions, Your Honor.</p> <p>22 JUDGE WALSTON: Individual Protestants?</p> <p>23 MR. FORSBERG: No questions.</p> <p>24 JUDGE WALSTON: Aligned Protestants?</p> <p>25 MR. WALKER: No questions, Your Honor.</p>

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1966	1968
<p>1 MR. HUMPHREY: None, Your Honor.</p> <p>2 MS. GOSS: No questions.</p> <p>3 JUDGE WALSTON: Okay. Thank you, Doctor.</p> <p>4 Oh, do you have any questions?</p> <p>5 JUDGE EGAN: No.</p> <p>6 JUDGE WALSTON: Okay. Thank you,</p> <p>7 Dr. Langhus.</p> <p>8 WITNESS LANGHUS: Thank you.</p> <p>9 JUDGE WALSTON: Does that conclude</p> <p>10 TexCom's rebuttal case?</p> <p>11 MR. RILEY: May I just confer with my</p> <p>12 colleagues just briefly?</p> <p>13 JUDGE WALSTON: Yes.</p> <p>14 MR. RILEY: I believe so, though, so</p> <p>15 everybody can exhale and breathe a little easier.</p> <p>16 (Recess: 12:25 p.m. to 12:26 p.m.)</p> <p>17 JUDGE WALSTON: We'll go back on the</p> <p>18 record.</p> <p>19 MR. RILEY: That is the Applicant's</p> <p>20 rebuttal case. Thank you. We have no other witnesses.</p> <p>21 JUDGE WALSTON: All right. We had a brief</p> <p>22 discussion off the record about a briefing schedule, and</p> <p>23 what we would request is that the parties confer with</p> <p>24 each other and typically come up with an agreed</p> <p>25 schedule. And if you can't -- you know, each of you</p>	<p>1 was your point?</p> <p>2 JUDGE EGAN: Yes.</p> <p>3 MR. RILEY: And with that time frame in</p> <p>4 mind, I can't imagine we can't agree on a schedule. So</p> <p>5 that seems like lots of time for us to work with. Thank</p> <p>6 you.</p> <p>7 JUDGE WALSTON: Are there any other</p> <p>8 matters we need to take up before we conclude?</p> <p>9 MR. RILEY: Some other little items in</p> <p>10 terms of -- and it may not be appropriate, but there</p> <p>11 were some outstanding motions to strike, things of that</p> <p>12 nature. Can we set dates on when those would be due, so</p> <p>13 we could then have an idea of what we're working with?</p> <p>14 MS. MENDOZA: Can we find out when we'll</p> <p>15 get the record?</p> <p>16 JUDGE WALSTON: I was about to ask that.</p> <p>17 I don't know if it's been requested on an expedited</p> <p>18 basis or not. Does the court reporter have an estimate?</p> <p>19 THE REPORTER: A week from today.</p> <p>20 JUDGE WALSTON: A week from today? So</p> <p>21 that's right about the holidays for the July 4th, so</p> <p>22 we'll say July 7th.</p> <p>23 MR. RILEY: So July 7th will be the date</p> <p>24 for any outstanding motions to strike or things of that</p> <p>25 nature?</p>
1967	1969
<p>1 submit your own, and we'll decide. But --</p> <p>2 MR. RILEY: I think we should be able to</p> <p>3 agree, but --</p> <p>4 JUDGE WALSTON: Right. And what is today?</p> <p>5 The 24th? If the parties could get that to us by --</p> <p>6 we're about to have some holidays coming up. Even if</p> <p>7 you get it to us by July 9th, that'll be fine.</p> <p>8 MR. RILEY: Can you give us a rough</p> <p>9 idea -- I'm sorry. There were some limitations, and</p> <p>10 I've forgotten them -- on terms of dates we ought to</p> <p>11 avoid, time frames we ought to avoid?</p> <p>12 JUDGE WALSTON: Administrative law judges</p> <p>13 are going to be out most of August, so --</p> <p>14 MR. RILEY: Okay.</p> <p>15 JUDGE EGAN: You have until the end of</p> <p>16 August to get everything in.</p> <p>17 JUDGE WALSTON: Right.</p> <p>18 JUDGE EGAN: Gives you a little leeway.</p> <p>19 MR. RILEY: That's what I'm thinking,</p> <p>20 so --</p> <p>21 JUDGE WALSTON: Right. We didn't want the</p> <p>22 record to close before we got back, I guess. So --</p> <p>23 MR. RILEY: I understand.</p> <p>24 JUDGE WALSTON: -- the final reply briefs</p> <p>25 should not be before the end of August, I guess. That</p>	<p>1 JUDGE WALSTON: Right. Make it --</p> <p>2 JUDGE EGAN: Why don't we make it till the</p> <p>3 9th that way they get --</p> <p>4 JUDGE WALSTON: Make it the 9th.</p> <p>5 MR. RILEY: Okay.</p> <p>6 JUDGE WALSTON: Everything will be the</p> <p>7 same.</p> <p>8 MS. MENDOZA: And then there will be a</p> <p>9 chance to reply to those motions?</p> <p>10 JUDGE WALSTON: Yes.</p> <p>11 MS. MENDOZA: Okay. Thank you.</p> <p>12 JUDGE WALSTON: I don't have a calendar in</p> <p>13 front of me. July 9th is a --</p> <p>14 JUDGE EGAN: It's a Friday.</p> <p>15 MR. RILEY: Friday? So we want to go with</p> <p>16 the following Wednesday for replies. Is that okay?</p> <p>17 JUDGE WALSTON: We'll make it a week, the</p> <p>18 16th.</p> <p>19 MR. RILEY: Want to make it a week? Okay.</p> <p>20 JUDGE WALSTON: Replies the 16th.</p> <p>21 JUDGE EGAN: And I think there are</p> <p>22 probably some exhibits that need to be copied and</p> <p>23 delivered, but the court reporter has all of them, from</p> <p>24 what I understand.</p> <p>25 MR. RILEY: I'm sorry, Judge?</p>

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1970	1972
<p>1 JUDGE EGAN: I believe there were just one 2 or two exhibits that we only had a copy of. 3 MR. RILEY: Yes, ma'am. 4 JUDGE EGAN: And if we can get those 5 copied and circulated to everybody, that would be 6 helpful. 7 MR. RILEY: We just talked about that. 8 One of the -- the well logs, is it safe to assume 9 everybody wants a copy of that one? The one that was 10 introduced? It's just a long document, so if we 11 don't -- if nobody wants it -- if anybody doesn't want 12 it, how about you let me know? Thank you. Thanks, 13 Judge. 14 JUDGE WALSTON: Anything else? 15 (No response) 16 JUDGE WALSTON: All right. If nothing 17 else, we thank all the parties. It's been a long, 18 hard-fought case, but everybody's done a good job 19 presenting their positions. 20 So that will conclude the hearing, and 21 we'll go off the record. Thank you all. 22 (Proceedings concluded at 12:29 p.m.) 23 24 25</p>	<p>1 2 3 EVELYN CODER Certified Shorthand Reporter CSR No. 2845-Expires 12/31/11 4 5 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233 6 7 8 9 LORRIE A. SCHNOOR, RMR, TCRR Certified Shorthand Reporter CSR No. 4642-Expires 12/31/11 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233 10 11 12 13 14 15 LOU RAY Certified Shorthand Reporter CSR No. 1791-Expires 12/31/11 16 17 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233 18 19 20 21 22 23 24 25</p>
1971	1973
<p>1 C E R T I F I C A T E 2 STATE OF TEXAS) 3 COUNTY OF TRAVIS) 4 We, Kim Pence, Evie Coder, Lorrie A. Schnoor, 5 Lou Ray, Suzanne Zimmer, Rebecca Callow and Leanna 6 Lynch, Certified Shorthand Reporters in and for the 7 State of Texas, do hereby certify that the 8 above-mentioned matter occurred as hereinbefore set out. 9 WE FURTHER CERTIFY THAT the proceedings of 10 such were reported by us or under our supervision, later 11 reduced to typewritten form under our supervision and 12 control and that the foregoing pages are a full, true, 13 and correct transcription of the original notes. 14 IN WITNESS WHEREOF, we have hereunto set our 15 hand and seal this 1st day of July 2010. 16 17 18 19 KIM PENCE Certified Shorthand Reporter CSR No. 4595-Expires 12/31/11 20 21 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 22 512.474.2233 23 24 25</p>	<p>1 2 SUZANNE ZIMMER Certified Shorthand Reporter CSR No. 8323-Expires 12/31/10 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233 3 4 5 6 7 8 9 REBECCA J. CALLOW, RPR, CRR Certified Shorthand Reporter CSR No. 8925-Expires 12/31/11 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233 10 11 12 13 14 15 LEANNA LYNCH, RPR Certified Shorthand Reporter CSR No. 7187-Expires 12/31/11 16 17 Firm Registration No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233 18 19 20 21 22 23 24 25</p>

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